



TEST REPORT

Test of: SOL22

To: OET Bulletin 65 Supplement C: (2001-01)
IEEE1528: 2003

FCC ID: PY7PM-0400

Test Report Serial No:
UL-SAR-RP92490JD02A V6.0

Version 6.0 supersedes all previous versions

This Test Report Is Issued Under The Authority Of Richelieu Quoi, SAR Technology Consultant:	 (APPROVED SIGNATORY)
Checked By: Naseer Mirza	 (APPROVED SIGNATORY)
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1. Customer Information

Company Name:	Sony Mobile Communications AB
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Address:	Nya Vattentorget 22188 Lund Sweden
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2. Summary of Test Results

Test Name	Specification Reference	Result
Specific Absorption Rate - GSM 850	OET Bulletin 65 Supplement C: (2001-01)	
Specific Absorption Rate - PCS 1900	OET Bulletin 65 Supplement C: (2001-01)	
Specific Absorption Rate - UMTS FDD 2	OET Bulletin 65 Supplement C: (2001-01)	
Specific Absorption Rate - UMTS FDD 5	OET Bulletin 65 Supplement C: (2001-01)	
Specific Absorption Rate - Wi-Fi 802.11b/g/n 2.4 GHz	OET Bulletin 65 Supplement C: (2001-01)	
Specific Absorption Rate- Wi-Fi 802.11a/n 5.0 GHz	OET Bulletin 65 Supplement C: (2001-01)	

Key to Results



= Complied



= Did not comply

2.1. Highest Reported SAR

Individual Transmitter Evaluation per Band:

Exposure Configuration	Technology Band	Highest Reported 1g -SAR (W/kg)	Equipment Class	Max Rated Source base Avg Power + Max Tolerance [dBm]	Highest Reported 1g-SAR (W/kg)
HEAD (Separation Distance 0mm)	GSM850	0.863	PCE	24.7	0.891
	PCS1900	0.249		21.7	
	UMTS FDD 2	0.278		23.1	
	UMTS FDD 5	0.891		24.5	
	WLAN 2.4 GHz	0.602	DTS	14.5	0.602
	WLAN 5.8 GHz	0.421		14.5	
	WLAN 5.2/5.3/5.6 GHz	0.969	NII	14.5	0.969
HOTSPOT (Separation Distance 10mm)	GSM850	1.469	PCE	25.7	1.469
	PCS1900	1.175		21.7	
	UMTS FDD 2	1.081		23.1	
	UMTS FDD 5	1.072		24.5	
	WLAN 2.4 GHz	0.179	DTS	14.5	0.179
	WLAN 5.8 GHz	0.161		14.5	
	WLAN 5.2/5.3/5.6 GHz	0.281	NII	14.5	0.281
BODY-WORN (Separation Distance 15mm)	GSM850	1.000	PCE	24.7	1.000
	PCS1900	0.450		21.7	
	UMTS FDD 2	0.537		23.1	
	UMTS FDD 5	0.846		24.5	
	WLAN 2.4 GHz	0.083	DTS	14.5	0.083
	WLAN 5.8 GHz	-		14.5	
	WLAN 5.2/5.3/5.6 GHz	0.109	NII	14.5	0.109

2.2. Highest Reported SAR (Continued):

Simultaneous transmission SAR test exclusion is determined for each operating configuration and exposure condition according to the reported standalone SAR of each applicable simultaneous transmitting antenna.

Simultaneous Transmitter Evaluation:

Exposure Configuration	Technology Band	Highest Reported 1g SAR (W/kg)	Equipment Class	Max Rated Source base Avg Power + Max Tolerance [dBm]	Highest Reported Sum-SAR 1g-SAR (W/kg)	SPLSR Ratio
HEAD (Separation Distance 0mm)	GSM850	0.545	PCE	24.7	1.514	N/A
	WLAN 5.0GHz	0.969	NII	14.5		
HOTSPOT (Separation Distance 10mm)	GSM850	1.469	PCE	25.7	1.656	0.030
	WLAN 5.0GHz	0.187	DTS	14.5		
	GSM850	1.469	PCE	25.7	1.653	0.021
	Bluetooth	0.184	DSS	9.5		
BODY-WORN (Separation Distance 15mm)	GSM850	1.000	PCE	24.7	1.109	N/A
	WLAN 5.0GHz	0.109	DTS	14.5		
	GSM850	1.000	PCE	24.7	1.123	N/A
	Bluetooth	0.123	DSS	9.5		

Note(s):

- As per FCC KDB 447498 D01, the individual test positions of each exposure conditions were considered separately for the sum of 1g reported SAR Simultaneous Transmission test exclusion.
- See section 7.4 and 7.5 for calculations - As per FCC KDB publication 447498, for cases where sum of WWAN and WLAN (or WPAN) exceed 1.6W/kg, the SAR to peak location separation ratio distance is calculated as shown below
 - SAR peak location separation ratio (SPLSR) for each antenna pair in each simultaneous transmission configuration is given by $(SAR_1 + SAR_2)^{1.5} / R_l \leq 0.04$ for 1-g, where R_l is the antenna separation distance in mm.
 - The SPLSR value is below the threshold ratio of 0.04 as indicated in the table above.

2.3. SAR measurement variability and measurement uncertainty analysis:

Exposure Configuration	Technology Band	Measured 1g -SAR (W/Kg)	Equipment Class	Max Meas. Source base Avg Power [dBm]	Ratio of Largest to Smallest SAR Measured
HOTSPOT (Separation Distance 10mm)	GSM850 (Original)	1.250	PCE	24.7	1.02
	GSM850 (Repeated)	1.230			
	PCS1900 (Original)	0.928		21.7	1.08
	PCS1900 (Repeated)	0.860			
	UMTS FDD 2 (Original)	0.899		23.1	1.08
	UMTS FDD 2 (Repeated)	0.835			
	UMTS FDD 5 (Original)	0.955		24.5	1.01
	UMTS FDD 5 (Repeated)	0.946			

Note(s):

1. The following step below were followed as per KDB publication 865664 D01:

1) Repeated measurement is not required when the original highest measured SAR is < 0.80 W/kg; steps 2) through 4) do not apply.

2) When the original highest measured SAR is ≥ 0.80 W/kg, repeat that measurement once.

3) Perform a second repeated measurement only if the ratio of largest to smallest SAR for the original and first repeated measurements is > 1.20 or when the original or repeated measurement is ≥ 1.45 W/kg (~ 10% from the 1-g SAR limit).

4) Perform a third repeated measurement only if the original, first or second repeated measurement is ≥ 1.5 W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20.

2.4. Location of Tests

All the measurements described in this report were performed at the premises of UL, Pavilion A, Ashwood Park, Ashwood Way, Basingstoke, Hampshire, RG23 8BG United Kingdom

2.5.Nominal and Maximum Output power:

Note: The following source based average rated powers for GSM/GPRS/EDGE are without consideration of uplink time slot.

Bands	Speech (Voice Mode)	
	Target (dBm)	Tolerance $\pm$ (dB)
GSM850	33.0	-1.0 ~ +0.7
PCS1900	30.0	-1.0 ~ +0.7

Bands	GPRS							
	Tx Slot 1		Tx Slot 2		Tx Slot 3		Tx Slot 4	
	Target (dBm)	Tolerance $\pm$ (dB)	Target (dBm)	Tolerance $\pm$ (dB)	Target (dBm)	Tolerance $\pm$ (dB)	Target (dBm)	Tolerance $\pm$ (dB)
GSM850	33.0	-1.0 ~ +0.7	30.5	-1.0 ~ +0.7	29.0	-1.0 ~ +0.7	28.0	-1.0 ~ +0.7
PCS1900	30.0	-1.0 ~ +0.7	27.0	-1.0 ~ +0.7	25.0	-1.0 ~ +0.7	24.0	-1.0 ~ +0.7

Bands	EDGE GMSK (MCS1-4)							
	Tx Slot 1		Tx Slot 2		Tx Slot 3		Tx Slot 4	
	Target (dBm)	Tolerance $\pm$ (dB)	Target (dBm)	Tolerance $\pm$ (dB)	Target (dBm)	Tolerance $\pm$ (dB)	Target (dBm)	Tolerance $\pm$ (dB)
GSM850	33.0	-1.0 ~ +0.7	30.5	-1.0 ~ +0.7	29.0	-1.0 ~ +0.7	28.0	-1.0 ~ +0.7
PCS1900	30.0	-1.0 ~ +0.7	27.0	-1.0 ~ +0.7	25.0	-1.0 ~ +0.7	24.0	-1.0 ~ +0.7

Bands	EDGE 8PSK (MCS5-9)							
	Tx Slot 1		Tx Slot 2		Tx Slot 3		Tx Slot 4	
	Target (dBm)	Tolerance $\pm$ (dB)	Target (dBm)	Tolerance $\pm$ (dB)	Target (dBm)	Tolerance $\pm$ (dB)	Target (dBm)	Tolerance $\pm$ (dB)
GSM850	27.0	-1.5 ~ +1.0	25.5	-1.5 ~ +1.0	24.5	-1.5 ~ +1.0	22.5	-1.5 ~ +1.0
PCS1900	26.0	-1.5 ~ +1.0	24.5	-1.5 ~ +1.0	23.5	-1.5 ~ +1.0	22.5	-1.5 ~ +1.0

Bands	CS		HS	
	Target (dBm)	Tolerance $\pm$ (dB)	Target (dBm)	Tolerance $\pm$ (dB)
UMTS FDD 2	22.5	-1.0 ~ +0.6	22.5	-1.0 ~ +0.6
UMTS FDD 5	24.0	-1.0 ~ +0.5	24.0	-1.0 ~ +0.5

	WLAN Modes {Low/Mid Channel}					
	2.4 GHz 802.11b		2.4 GHz 802.11g		2.4 GHz 802.11n	
	1 Mbps	11 Mbps	6 Mbps	54 Mbps	6.5 Mbps	65 Mbps
Max Power {Target + Upper Tolerance} (dBm)	14.5	14.5	11.5	11.5	11.5	11.5

	WLAN Modes {High Channel}					
	2.4 GHz 802.11b		2.4 GHz 802.11g		2.4 GHz 802.11n	
	1 Mbps	11 Mbps	6 Mbps	54 Mbps	6.5 Mbps	65 Mbps
Max Power {Target + Upper Tolerance} (dBm)	14.5	14.5	11.5	11.5	10.8	10.8

Nominal and Maximum Output power (Continued):

WLAN Modes								
5.0 GHz 802.11a								
	5.2 GHz 802.11a		5.3 GHz 802.11a		5.6 GHz 802.11a		5.8 GHz 802.11a	
	6 Mbps	54 Mbps	6 Mbps	54 Mbps	6 Mbps	54 Mbps	6 Mbps	54 Mbps
Max Power {Target + Upper Tolerance} (dBm)	14.5	12.5	14.5	12.5	14.5	12.5	14.5	12.5

WLAN Modes								
5.0 GHz 802.11n HT20								
	5.2 GHz 802.11n		5.3 GHz 802.11n		5.6 GHz 802.11n		5.8 GHz 802.11n	
	6.5 Mbps	65 Mbps	6.5 Mbps	65 Mbps	6.5 Mbps	65 Mbps	6.5 Mbps	65 Mbps
Max Power {Target + Upper Tolerance} (dBm)	11.5	11.5	11.5	11.5	11.5	11.5	11.5	11.5

WLAN Modes								
5.0 GHz 802.11n HT40								
	5.2 GHz 802.11n		5.3 GHz 802.11n		5.6 GHz 802.11n		5.8 GHz 802.11n	
	13.5 Mbps	135 Mbps	13.5 Mbps	135 Mbps	13.5 Mbps	135 Mbps	13.5 Mbps	135 Mbps
Max Power {Target + Upper Tolerance} (dBm)	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5

Band	Max Power {Target (dBm) + Upper Tolerance (dB)}
Bluetooth	9.5

Note:

1. As per KDB865664 D02 SAR Reporting v01, 2.1.4(a), the nominal and maximum average source based rated power, declared by manufacturer are shown in the above tables.
2. These are specified maximum allowed average power for all the wireless modes and frequency bands supported.

3. Test Specification, Methods and Procedures

3.1. Test Specification

Reference:	OET Bulletin 65 Supplement C: (2001-01)
Title:	Evaluating Compliance with FCC Guidelines for Human Exposure to Radio Frequency Electromagnetic Fields.
Purpose of Test:	To determine whether the equipment met the basic restrictions as defined in OET Bulletin 65 Supplement C: (2001-01) using the SAR averaging method as described in the test specification above.

The Equipment Under Test complied with the Specific Absorption Rate for general population/uncontrolled exposure limit of 1.6 W/kg as specified in FCC 47 CFR part 2 (2.1093) and ANSI C95.1-1992 and has been tested in accordance with the reference documents in section 3.2 of this report.

3.2. Methods and Procedures Reference Documentation

The methods and procedures used were as detailed in:

Federal Communications Commission, "Evaluating compliance with FCC Guidelines for human exposure to radio frequency electromagnetic fields", OET Bulletin 65 Supplement C, FCC, Washington, D.C, 20554, 2001.

Thomas Schmid, Oliver Egger and Neils Kuster, "Automated E-field scanning system for dosimetric assessments", IEEE Transaction on microwave theory and techniques, Vol. 44, pp. 105-113, January 1996.

Neils Kuster, Ralph Kastle and Thomas Schmid, "Dosimetric evaluation of mobile communications equipment with know precision", IEICE Transactions of communications, Vol. E80-B, No.5, pp. 645-652, May 1997.

IEEE 1528: 2003

IEEE Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques

FCC KDB Publication:

KDB 248227 D01 "SAR measurements for 802.11a/b/g v01r02"

KDB 447498 D01 General RF Exposure Guidance v05

KDB 648474 D04 SAR Handsets Multi Xmitter and Ant v01

KDB 941225 D01 SAR test for 3G devices v02

KDB 941225 D03 " SAR Test Reduction GSM/GPRS/EDGE v01"

KDB 941225 D06 "Hot Spot SAR v01"

KDB 865664 D01 SAR measurement 100 MHz to 6 GHz v01

KDB 865664 D02 SAR Reporting v01

3.3. Definition of Measurement Equipment

The measurement equipment used complied with the requirements of the standards referenced in the methods & procedures section above. Appendix 1 contains a list of the test equipment used.

4. Equipment Under Test (EUT)

4.1. Identification of Equipment Under Test (EUT)

Description:	Mobile Handset
Brand Name:	Sony
Model Name or Number:	SOL22
Type Number:	PM-0400-BV
Serial Number:	CB5123RQDT
IMEI Number:	00440245-092435-6
Hardware Version Number:	AP1
Software Version Number:	10.2.F.0.101
Hardware Revision of GSM Module:	None Stated
Software Revision of GSM Module:	None Stated
FCC ID Number:	PY7PM-0400
Country of Manufacture:	China
Date of Receipt:	12 March 2013

Note(s):

This sample was used to perform WWAN SAR evaluation measurements on bands GSM850, PCS1900 Body, UMTS FDD 2 Body and UMTS FDD 5 only. The sample supports simultaneous transmission with the WWAN and WLAN. Wireless Personal Hotspot is also supported and was evaluated as per KDB 941225 D06 "Hot Spot SAR v01"

Description:	Mobile Handset
Brand Name:	Sony
Model Name or Number:	SOL22
Type Number:	PM-0400-BV
Serial Number:	CB5123SGAM
IMEI Number:	00440245-073739-4
Hardware Version Number:	AP1
Software Version Number:	10.2.F.0.101
Hardware Revision of GSM Module:	None Stated
Software Revision of GSM Module:	None Stated
FCC ID Number:	PY7PM-0400
Country of Manufacture:	China
Date of Receipt:	12 March 2013

Note(s):

This sample was used to perform WWAN SAR evaluation measurements on bands PCS1900 Head and UMTS FDD 2 Head only. The sample supports simultaneous transmission with the WWAN and WLAN. Wireless Personal Hotspot is also supported and was evaluated as per KDB 941225 D06 "Hot Spot SAR v01"

Identification of Equipment Under Test (EUT) (Continued):

Description:	Mobile Handset
Brand Name:	Sony
Model Name or Number:	SOL22
Type Number:	PM-0400-BV
Serial Number:	CB5123RQ5Y
IMEI Number:	00440245-092607-0
Hardware Version Number:	AP1
Software Version Number:	s_atp_gaga_0_0_36_4_c
Hardware Revision of GSM Module:	None Stated
Software Revision of GSM Module:	None Stated
FCC ID Number:	PY7PM-0400
Country of Manufacture:	China
Date of Receipt:	12 March 2013

Note(s):

This sample was used to perform WLAN SAR evaluation measurements on bands WLAN 2.4GHz Body and WLAN 5GHz Body only. The sample supports simultaneous transmission with the WWAN and WLAN. Wireless Personal Hotspot is also supported and was evaluated as per KDB 941225 D06 "Hot Spot SAR v01"

Description:	Mobile Handset
Brand Name:	Sony
Model Name or Number:	SOL22
Type Number:	PM-0400-BV
Serial Number:	CB5123RQ7B
IMEI Number:	00440245-073738-6
Hardware Version Number:	AP1
Software Version Number:	s_atp_gaga_0_0_36_4_c
Hardware Revision of GSM Module:	None Stated
Software Revision of GSM Module:	None Stated
FCC ID Number:	PY7PM-0400
Country of Manufacture:	China
Date of Receipt:	12 March 2013

Note(s):

This sample was used to perform WLAN SAR evaluation measurements on bands WLAN 2.4GHz Head and WLAN 5GHz Head only. The sample supports simultaneous transmission with the WWAN and WLAN. Wireless Personal Hotspot is also supported and was evaluated as per KDB 941225 D06 "Hot Spot SAR v01"

Identification of Equipment Under Test (EUT) (Continued):

Description:	Mobile Handset
Brand Name:	Sony
Model Name or Number:	SOL22
Type Number:	PM-0400-BV
Serial Number:	CB5123SGR5
IMEI Number:	00440245-092515-5
Hardware Version Number:	AP1
Software Version Number:	10.2.F.0.101
Hardware Revision of GSM Module:	None Stated
Software Revision of GSM Module:	None Stated
FCC ID Number:	PY7PM-0400
Country of Manufacture:	China
Date of Receipt:	12 March 2013

Note(s):

This sample was used to perform WWAN conducted power measurements only. The sample supports simultaneous transmission with the WWAN and WLAN. Wireless Personal Hotspot is also supported and was evaluated as per KDB 941225 D06 "Hot Spot SAR v01"

Description:	Mobile Handset
Brand Name:	Sony
Model Name or Number:	SOL22
Type Number:	PM-0400-BV
Serial Number:	CB5123SGPY
IMEI Number:	00440245-092525-4
Hardware Version Number:	AP1
Software Version Number:	s_atp_gaga_0_0_36_4_c
Hardware Revision of GSM Module:	None Stated
Software Revision of GSM Module:	None Stated
FCC ID Number:	PY7PM-0400
Country of Manufacture:	China
Date of Receipt:	12 March 2013

Note(s):

This sample was used to perform WLAN conducted power measurements only. The sample supports simultaneous transmission with the WWAN and WLAN. Wireless Personal Hotspot is also supported and was evaluated as per KDB 941225 D06 "Hot Spot SAR v01"

4.2. Description of EUT

The Equipment Under Test is a Smart Phone with GSM 2G Quad Band, 3G Tri band, LTE Tri Band and Wi-Fi bands. The EUT has GPRS Class 12 / EDGE Class 12, UMTS FDD 1, 2, 5 With HSPA (with HSDPA Category 10 and HSUPA Category 6) , LTE Band 1, 11, 18, WLAN 802.11 a/b/g/n, Bluetooth Class 1, Personal hotspot mode and RFID mode capabilities.

4.3. Modifications Incorporated in the EUT

EUT (IMEI: 00440245-092435-6) is used to perform GSM850, PCS1900 Body, UMTS FDD 2 Body and UMTS FDD 5 SAR measurements only.

EUT (IMEI: 00440245-073739-4) is used to perform PCS1900 Head and UMTS FDD 2 Head SAR measurements only.

EUT (IMEI: 00440245-092607-0) is used to perform WLAN 2.4GHz Body and WLAN 5GHz Body SAR measurements only.

EUT (IMEI: 00440245-073738-6) is used to perform WLAN 2.4GHz Head and WLAN 5GHz Head SAR measurements only.

EUT (IMEI: 00440245-092515-5) is used to perform WWAN conducted power measurements only.

EUT (IMEI: 00440245-092525-4) is used to perform WLAN conducted power measurements only.

4.4. Accessories

The following accessories were supplied with the EUT during testing:

Description:	Battery
Brand Name:	Sony
Model Name or Number:	BA950
Serial Number:	001308
Cable Length and Type:	Not Applicable
Country of Manufacture:	China
Connected to Port	5 pin contact

Description:	Battery
Brand Name:	Sony
Model Name or Number:	BA950
Serial Number:	001532
Cable Length and Type:	Not Applicable
Country of Manufacture:	China
Connected to Port	5 pin contact

Description:	Personal Hands-Free Kit (PHF)
Brand Name:	Sony
Model Name or Number:	MH750
Serial Number:	12060C160061850
Cable Length and Type:	~1.2 m
Country of Manufacture:	None Stated
Connected to Port	3.5mm Audio jack and custom type

Accessories (Continued)

Description:	Memory Card
Brand Name:	None Stated (Generic)
Model Name or Number:	None Stated
Serial Number:	None Stated
Cable Length and Type:	Not Applicable
Country of Manufacture:	China
Connected to Port	Dedicated Micro SD Slot

Description:	Dummy Battery
Brand Name:	None Stated
Model Name or Number:	None Stated
Serial Number:	None Stated
Cable Length and Type:	~0.5m
Country of Manufacture:	None Stated
Connected to Port	5 pin contact

Note(s):

This Dummy Battery was only used to perform conducted power measurements.

4.5. Support Equipment

The following support equipment was used to exercise the EUT during testing:

Description:	Wireless Communication Test Set
Brand Name:	Agilent
Model Name or Number:	8960 Series 10 (E5515C)
Serial Number:	GB46311280
Cable Length and Type:	~4.0m Utiflex Cable
Connected to Port:	RF (Input / Output) Air Link

Description:	Wireless Communication Test Set
Brand Name:	Agilent
Model Name or Number:	8960 Series 10 (E5515E)
Serial Number:	GB46200666
Cable Length and Type:	~4.0m Utiflex Cable
Connected to Port:	RF (Input / Output) Air Link

Description:	Radio Communication Analyzer
Brand Name:	Anritsu
Model Name or Number:	MT8820C
Serial Number:	6200938937
Cable Length and Type:	~4.0m Utiflex Cable
Connected to Port:	RF (Input / Output) Air Link

4.6. Additional Information Related to Testing

Equipment Category	GSM/GPRS850 PCS/GPRS1900 UMTS FDD 2 UMTS FDD 5 WiFi802.11 a/b/g/n	
Type of Unit	Portable Transceiver	
Intended Operating Environment:	Within GSM, UMTS, WiFi and <i>Bluetooth</i> Coverage	
Transmitter Maximum Output Power Characteristics:	GSM850	Communication Test Set was configured to allow the EUT to transmit at a maximum power using Power Control Level (PCL) setting of 5.
	PCS1900	Communication Test Set was configured to allow the EUT to transmit at a maximum power using Power Control Level (PCL) setting of 0.
	UMTS FDD 2	Communication Test Set configured to allow to EUT to transmit at a maximum power as per KDB 941225 D01.
	UMTS FDD 5	Communication Test Set configured to allow to EUT to transmit at a maximum power as per KDB 941225 D01.
	2.4 GHz Wi-Fi 802.11b/g/n	Test Software was used to configure the EUT to transmit at a maximum power of up to 14.3dBm.
	5.0 GHz Wi-Fi 802.11a/n (HT20 / HT40)	Test Software was used to configure the EUT to transmit at a maximum power of up to 14.2dBm.
	<i>Bluetooth</i>	:= 8.91 mW or ~9.50 dBm
Transmitter Frequency Range:	GSM850	824 to 849 MHz
	PCS1900	1850 to 1910 MHz
	UMTS FDD 2	1852 to 1908 MHz
	UMTS FDD 5	826 to 847 MHz
	2.4 GHz Wi-Fi 802.11b/g/n	2412 to 2462 MHz
	5.0 GHz Wi-Fi 802.11a/n (HT20 / HT40)	5180 to 5825 MHz

Additional Information Related to Testing (Continued)

Transmitter Frequency Allocation of EUT When Under Test:	Bands	Channel Number	Channel Description	Frequency (MHz)
	GSM850	128	Low	824.2
		190	Middle	836.6
		251	High	848.8
	PCS1900	512	Low	1850.2
		661	Middle	1880.0
		810	High	1909.8
	UMTS FDD 2	9262	Low	1852.4
		9400	Middle	1880.0
		9538	High	1907.6
	UMTS FDD 5	4132	Low	826.4
		4183	Middle	836.6
		4233	High	846.6
	2.4 GHz Wi-Fi 802.11b/g/n	1	Low	2412.0
		6	Middle	2437.0
		11	High	2462.0

Additional Information Related to Testing (Continued)**Transmitter Frequency Allocation of EUT When Under Test:****Band: 5.0 GHz Wi-Fi 802.11a/n (HT20 / HT40)****Channel Number****Frequency
(MHz)**

36

5180.0

38

5190.0

40

5200.0

44

5220.0

46

5230.0

48

5240.0

52

5260.0

54

5270.0

56

5280.0

60

5300.0

62

5310.0

64

5320.0

100

5500.0

102

5510.0

104

5520.0

108

5540.0

110

5550.0

112

5560.0

116

5580.0

118

5590.0

120

5600.0

124

5620.0

126

5630.0

128

5640.0

132

5660.0

134

5670.0

136

5680.0

140

5700.0

149

5745.0

151

5755.0

153

5765.0

157

5785.0

159

5795.0

161

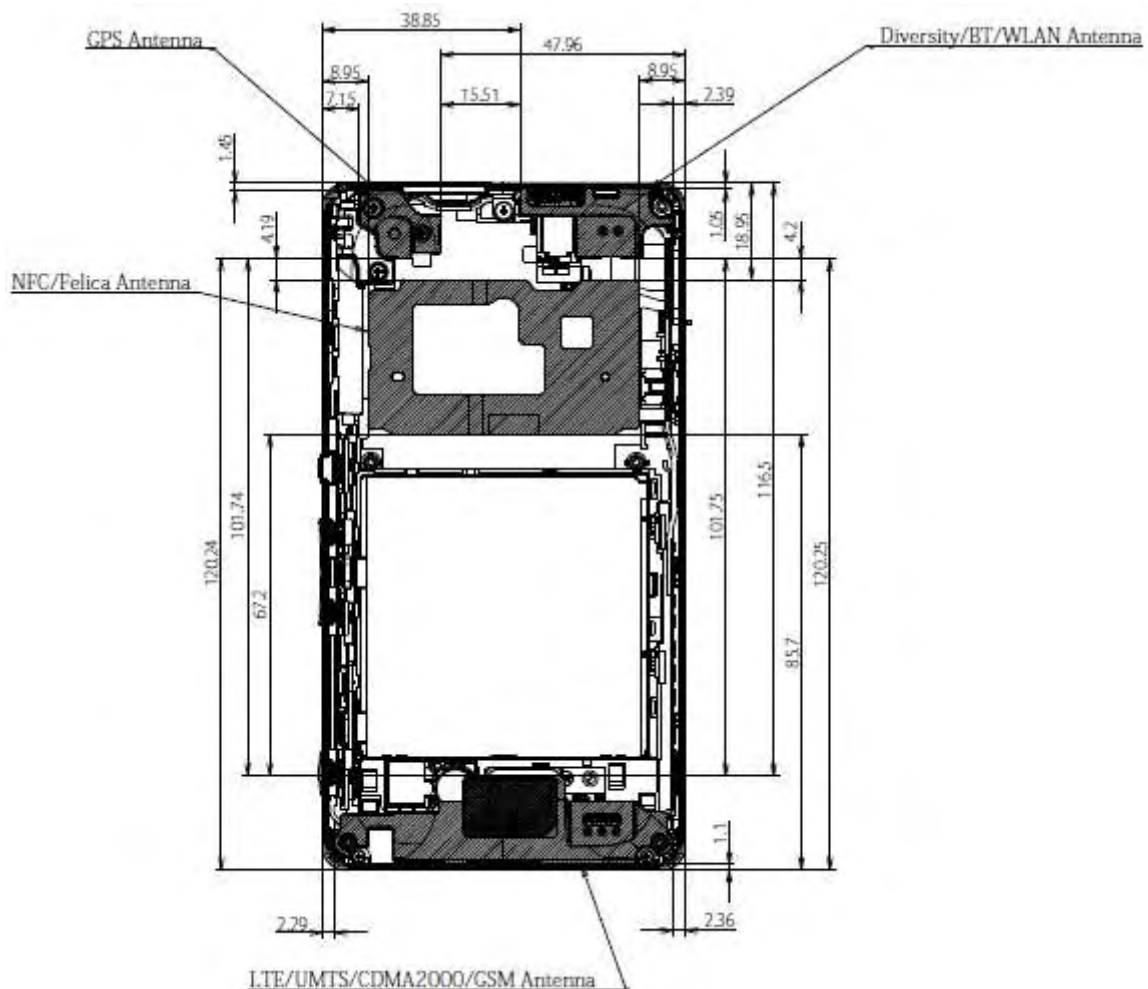
5805.0

165

5825.0

Additional Information Related to Testing (Continued):

Modulation(s):	GMSK (GSM/ GPRS): 217 Hz QPSK(UMTS / HSDPA / HSUPA):0Hz DBPSK, BPSK, CCK (Wi-Fi): 0 Hz
Modulation Scheme (Crest Factor):	GSMK (GSM): 8.3 GMSK (GPRS850): 2 GMSK (GPRS1900): 2 QPSK(UMTS FDD / HSDPA / HSUPA): 1 DBPSK, BPSK, CCK (Wi-Fi): 1
Antenna Type:	Internal integral
Antenna Length:	Unknown
Number of Antenna Positions:	1 fixed (WWAN) 1 fixed (WLAN/Bluetooth/Diversity) 1 fixed (GPS) 1 fixed (NFC) 1 Extendable and Retractable (DTV)
Power Supply Requirement:	3.7V
Battery Type(s):	Li-ion



5. Deviations from the Test Specification

Test was performed as per KDB 248227 D01 "SAR measurements for 802.11a/b/g v01r02", KDB 447498 D01 General RF Exposure Guidance v05, KDB 648474 D04 SAR Handsets Multi Xmitter and Ant v01, KDB 941225 D01 SAR test for 3G devices v02, KDB 941225 D03 " SAR Test Reduction GSM/GPRS/EDGE v01", KDB 941225 D06 "Hot Spot SAR v01" , KDB 865664 D01 SAR measurement 100 MHz to 6 GHz v01, KDB 865664 D02 SAR Reporting v01 , according to the handset procedures in IEEE Std 1528-2003 and OET Bulletin 65 Supplement C 01-01. The assessment for Personal Wireless Hotspot was also evaluated as per the FCC KDB 941225 D06 "Hot Spot SAR v01".

For technologies bands supporting personal hotspot mode, SAR was evaluated on all the sides and surfaces within 25mm of the transmitting antenna (WWAN or WLAN) as per FCC KDB 941225 D06 "Hot Spot SAR v01".

GPRS class 12 / uplink setup of 1-uplink, 2-uplink, 3-uplink and 4-uplink were all evaluated to find the setting with the highest power reference point (unit v/m) as per the DASY4 system. 4-uplink was found to give the highest power reference point measurement on the DASY4 system (unit v/m) for GPRS850 and GPRS1900. All settings were performed with the device in a fixed position Front facing phantom at 0mm separation to ensure there were no positioning errors. The following values were measured relative to the uplink settings:

GPRS Mode	GPRS850 Power reference (v/m)	GPRS1900 Power reference (v/m)
1 uplink	13.94	2.98
2 uplink	15.76	3.37
3 uplink	16.64	3.29
4 uplink	17.37	3.41

Note: Power reference point measurements are from the DASY4 system and used to check the device power drift although the units are v/m. For informational purpose to ensure the worst case uplink time slot is also verified by the DASY4 SAR system, this was use as per above comment at a fixed point.

As per 648474 D04 SAR Handsets Multi Xmitter and Ant v01, "When the reported SAR for a body-worn accessory, measured without a headset connected to the handset, is > 1.2 W/kg, the highest reported SAR configuration for that wireless mode and frequency band should be repeated for that body-worn accessory with a headset attached to the handset". Hence, Body worn configurations were not evaluated with PHF attached.

6. Operation and Configuration of the EUT during Testing

6.1. Operating Modes

The EUT was tested in the following operating mode(s) unless otherwise stated:

- GSM850 – Voice allocated mode with Communication Test Set configured to allow the EUT to transmit at a maximum power using Power Control Level (PCL) setting of 5.
- GPRS850 – Data allocated mode with Communication Test Set configured to allow the EUT to transmit at a maximum power using Power Control Level (PCL) setting of 5. Tested using 4 Uplink time slots with CS1 for GPRS.
- PCS1900 – Voice allocated mode with Communication Test Set configured to allow the EUT to transmit at a maximum power using Power Control Level (PCL) setting of 0.
- GPRS1900 – Data allocated mode with Communication Test Set configured to allow the EUT to transmit at a maximum power using Power Control Level (PCL) setting of 0. Tested using 4 Uplink time slots with CS1 for GPRS.

GSM850: Power Table Settings used for Test Set	
Power Control Level PCL	Nominal Power (dBm)
0 ... 2	39
3	37
4	35
5	33
6	31
7	29
8	27
9	25
10	23
11	21
12	19
13	17
14	15
15	13
16	11
17	9
18	7
19 ... 31	5

PCS1900: Power Table Settings used for Test Set	
Power Control Level PCL	Nominal Power (dBm)
22 ... 29	Reserved
30	33
31	32
0	30
1	28
2	26
3	24
4	22
5	20
6	18
7	16
8	14
9	12
10	10
11	8
12	6
13	4
14	2
15	0
16 ... 21	Reserved

- UMTS FDD 2, 5 Call allocated mode with Communication Test Set configured to allow the EUT to transmit at a maximum as per KDB 941225 D01.
- UMTS FDD 2, 5 - RMC 12.2kbps + HSUPA with Test loop mode 1 and TPC bits configured to all "1's", Sub-test 5, AG Index set to 21 and E-TFCI set to 81 with Communication Test Set configured to allow to EUT to transmit at a maximum power as per KDB 941225 D01.
- UMTS FDD 2, 5 - RMC 12.2kbps + HSDPA with Test loop mode 1 and TPC bits configured to all "1's", Sub-test 1 with Communication Test Set configured to allow to EUT to transmit at a maximum power as per KDB 941225 D01.

Operating Modes (Continued)

- 2.4 GHz WiFi802.11b/g/n Data allocated mode using 'HyperTerminal' software to excise mode 'b', 'g' and 'n', with maximum power of up to 14.3 dBm for 'b' mode and 11.5 dBm for 'g' and 11.5 dBm for 'n' modes.
- 5.0 GHz WiFi802.11a/n Data allocated mode using 'HyperTerminal' software to excise mode 'a' and 'n', with maximum power of up to 14.2 dBm for 'a' mode and 10.8 dBm for 'n' modes.

6.1. Configuration and Peripherals

The EUT was tested in the following configuration(s) unless otherwise stated:

- Standalone fully charged battery powered.
- Head, Hotspot Mode and Body-worn configurations were evaluated.
- GPRS Class 12: setup for 1-uplink, 2-uplink, 3-uplink and 4-uplink were evaluated to find the setting with the highest power reference measurements. 4-uplink was found to give the highest power reference point measurement on the DASY4 system (unit v/m) for GPRS850 and GPRS1900. All settings were performed with the device in a fixed position 'Back facing phantom' at 0mm separation to ensure there were no positioning errors.
- GSM, GPRS and EDGE power measurement were all measured as per FCC pubs. 941225 D03. Although power reduction was allowed SAR test was performed on GPRS using GMSK. Test reduction was applied to EDGE using GMSK and 8PSK modulation scheme.

Head Configuration

- a) The EUT was placed in a normal operating position with the centre of the ear-piece aligned with the ear canal on the phantom.
- b) With the ear-piece touching the phantom the centre line of the EUT was aligned with an imaginary plane (X and Y axis) consisting of three lines connecting both ears and the mouth.
- c) For the cheek position the EUT was gradually moved towards the cheek until any point of the mouth-piece or keypad touched the cheek.
- d) For the tilted position the EUT was positioned as for the cheek position, and then the horizontal angle was increased by fifteen degrees (the phone keypad was moved away from the cheek by fifteen degrees).
- e) SAR measurements were evaluated at maximum power and the unit was operated for an appropriate period prior to the evaluation in order to minimise the drift.
- f) The device was keyed to operate continuously in the transmit mode for the duration of the test.
- g) The location of the maximum spatial SAR distribution (hot spot) was determined relative to the EUT and its antenna.
- h) The EUT was transmitting at full power throughout the duration of the test powered by a fully charged battery.

Body Configuration

- a) The EUT was placed in a normal operating position where the centre of EUT was aligned with the centre reference point on the flat section of the 'SAM' phantom.
- b) With the EUT touching the phantom at an imaginary centre line. The EUT was aligned with a marked plane (X and Y axis) consisting of two lines.
- c) For the touch-safe position the EUT was gradually moved towards the flat section of the 'SAM' phantom until any point of the EUT touched the phantom.
- d) For position(s) greater than 0mm separation the EUT was positioned as per the touch-safe position, and then the vertical height was decreased/adjusted as required.
- e) SAR measurements were evaluated at maximum power and the unit was operated for an appropriate period prior to the evaluation in order to minimise the drift.
- f) The device was keyed to operate continuously in the transmit mode for the duration of the test.
- g) The location of the maximum spatial SAR distribution (hot spot) was determined relative to the EUT and its antenna.
- h) The EUT was transmitting at full power throughout the duration of the test powered by a fully charged battery.

6.2. Configuration Consideration

Technology Antenna	Configuration	Antenna-to-User Separation	Position	Antenna-to-Edge Separation	Evaluation Considered
WWAN	Head	0mm	Touch Left	<25mm	Yes
			Tilt Left	<25mm	Yes
			Touch Right	<25mm	Yes
			Tilt Right	<25mm	Yes
	Hotspot	10mm	Front	<25mm	Yes
			Back	<25mm	Yes
			Top Edge	>25mm	No
			Bottom Edge	<25mm	Yes
			Right Edge	<25mm	Yes
			Left Edge	<25mm	Yes
	Body	15mm	Front	<25mm	Yes
			Back	<25mm	Yes
WLAN	Head	0mm	Touch Left	<25mm	Yes
			Tilt Left	<25mm	Yes
			Touch Right	<25mm	Yes
			Tilt Right	<25mm	Yes
	Hotspot	10mm	Front	<25mm	Yes
			Back	<25mm	Yes
			Top Edge	<25mm	Yes
			Bottom Edge	>25mm	No
			Right Edge	>25mm	No
			Left Edge	<25mm	Yes
	Body	15mm	Front	<25mm	Yes
			Back	<25mm	Yes

Note(s):

- Test distances are as per FCC KDB publication 447498 D01v05 for mobile handsets.
- Bluetooth standalone SAR is excluded as the output power meets the exclusion threshold:

“

- The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at *test separation distances* ≤ 50 mm are determined by:

$$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] \cdot [\sqrt{f_{\text{GHz}}}] \leq 3.0 \text{ for 1-g SAR and } \leq 7.5 \text{ for 10-g extremity SAR,}^{16} \text{ where}$$

- f_{GHz} is the RF channel transmit frequency in GHz
- Power and distance are rounded to the nearest mW and mm before calculation¹⁷
- The result is rounded to one decimal place for comparison

” Taken from FCC KDB publication 447498 D01v05

6.3. SAR Test Exclusion Consideration

Frequency Band	Configuration(s)		
	Head	Hotspot Mode	Body-worn
GSM850	No	No	No
PCS1900	No	No	No
UMTS FDD 2	No	No	No
UMTS FDD 5	No	No	No
WLAN 2.4 GHz	No	No	No
WLAN 5.0 GHz	No	No	No
Bluetooth	N/A	Yes	Yes

Note:

1. As per KDB 447498 D01 General RF Exposure Guidance v05, The Frequency Bands with Rated Power including Upper tolerance, which qualify for **Standalone SAR Test Exclusion**, are as per the above table.

Bluetooth Head configuration is not applicable and NOT most conservative, hence it is NOT Applicable for SAR Test Evaluation, whereas, Hotspot and Body-worn is. The SAR exclusion consideration is explained below.

Applying the above formula for *Bluetooth* Hotspot Mode we get:

- For 2450MHz, $[(8.91)/10] * [\sqrt{2.45}] = 1.4 \leq 3.0$

Applying the above formula for *Bluetooth* Body-worn we get:

- For 2450MHz, $[(8.91)/15] * [\sqrt{2.45}] = 0.9 \leq 3.0$

Hence, testing is not required on *Bluetooth* Hotspot Mode and Body-worn configurations.

2. The details for the **Maximum Rated Power** and tolerance(s) can be found in section 2.5.

7. Measurements, Examinations and Derived Results

7.1. General Comments

This section contains test results only.

Measurement uncertainties are evaluated in accordance with current best practice. Our reported expanded uncertainties are based on standard uncertainties, which are multiplied by an appropriate coverage factor to provide a statistical confidence level of approximately 95%. Please refer to section 8 for details of measurement uncertainties.

7.2. Conducted Average Power Measurements**7.2.1. Conducted Average Power Measurement 2G: GSM850**

Channel Number	Frequency (MHZ)	Power (dBm)	Avg. Burst Power with consideration for uplink time slot (dBm)	Note
128	824.2	33.0	24.0	Conducted, GMSK
190	836.6	32.9	23.9	Conducted, GMSK
251	848.8	32.9	23.9	Conducted, GMSK

GPRS850 - Measured Average Power without consideration for Uplink time slots:

Channel Number	Frequency (MHZ)	Power (dBm) 1Uplink	Power (dBm) 2Uplink	Power (dBm) 3Uplink	Power (dBm) 4Uplink	Note
128	824.2	33.0	30.4	28.9	28.0	Conducted, GMSK
190	836.6	32.9	30.3	28.8	27.8	Conducted, GMSK
251	848.8	32.9	30.3	28.8	27.9	Conducted, GMSK

GPRS850 - Calculated Value with consideration for Uplink time slots:

Channel Number	Frequency (MHZ)	Power (dBm) 1Uplink	Power (dBm) 2Uplink	Power (dBm) 3Uplink	Power (dBm) 4Uplink	Note
128	824.2	24.0	24.4	24.6	25.0	Conducted, GMSK
190	836.6	23.9	24.3	24.5	24.8	Conducted, GMSK
251	848.8	23.9	24.3	24.5	24.9	Conducted, GMSK

EDGE850 - Measured Average Power without consideration for Uplink time slots:

Channel Number	Frequency (MHZ)	Power (dBm) 1Uplink	Power (dBm) 2Uplink	Power (dBm) 3Uplink	Power (dBm) 4Uplink	Note
128	824.2	33.0	30.4	28.9	28.0	Conducted, GMSK
190	836.6	32.9	30.3	28.8	27.8	Conducted, GMSK
251	848.8	32.9	30.3	28.8	27.9	Conducted, GMSK

EDGE850 - Calculated Value with consideration for Uplink time slots:

Channel Number	Frequency (MHZ)	Power (dBm) 1Uplink	Power (dBm) 2Uplink	Power (dBm) 3Uplink	Power (dBm) 4Uplink	Note
128	824.2	24.0	24.4	24.6	25.0	Conducted, GMSK
190	836.6	23.9	24.3	24.5	24.8	Conducted, GMSK
251	848.8	23.9	24.3	24.5	24.9	Conducted, GMSK

Note:**Scale factor for uplink time slot:**

- 1 Uplink: time slot ratio = 8:1 => $10 \cdot \log(8/1) = 9.03 \text{ dB}$
- 2 Uplink: time slot ratio = 8:2 => $10 \cdot \log(8/2) = 6.02 \text{ dB}$
- 3 Uplink: time slot ratio = 8:3 => $10 \cdot \log(8/3) = 4.26 \text{ dB}$
- 4 Uplink: time slot ratio = 8:4 => $10 \cdot \log(8/4) = 3.01 \text{ dB}$

EDGE (MCS9 ~ 8PSK)**EDGE850 - Measured Average Power without consideration for Uplink time slots:**

Channel Number	Frequency (MHZ)	Power (dBm) 1Uplink	Power (dBm) 2Uplink	Power (dBm) 3Uplink	Power (dBm) 4Uplink	Note
128	824.2	26.8	25.4	24.3	22.4	Conducted, 8PSK
190	836.6	26.7	25.3	24.2	22.3	Conducted, 8PSK
251	848.8	26.7	25.3	24.2	22.3	Conducted, 8PSK

EDGE850 - Calculated Value with consideration for Uplink time slots:

Channel Number	Frequency (MHZ)	Power (dBm) 1Uplink	Power (dBm) 2Uplink	Power (dBm) 3Uplink	Power (dBm) 4Uplink	Note
128	824.2	17.8	19.4	20.0	19.4	Conducted, 8PSK
190	836.6	17.7	19.3	19.9	19.3	Conducted, 8PSK
251	848.8	17.7	19.3	19.9	19.3	Conducted, 8PSK

Note:**Scale factor for uplink time slot:**

- 1 Uplink: time slot ratio = 8:1 => $10 \cdot \log(8/1) = 9.03 \text{ dB}$
- 2 Uplink: time slot ratio = 8:2 => $10 \cdot \log(8/2) = 6.02 \text{ dB}$
- 3 Uplink: time slot ratio = 8:3 => $10 \cdot \log(8/3) = 4.26 \text{ dB}$
- 4 Uplink: time slot ratio = 8:4 => $10 \cdot \log(8/4) = 3.01 \text{ dB}$

7.2.2. Conducted Average Power Measurement 2G: PCS1900

Channel Number	Frequency (MHZ)	Power (dBm)	Avg. Burst Power with consideration for uplink time slot (dBm)	Note
512	1850.2	29.8	20.8	Conducted, GMSK
661	1880.0	29.9	20.9	Conducted, GMSK
810	1909.8	29.8	20.8	Conducted, GMSK

GPRS1900 - Measured Average Power without consideration for Uplink time slots:

Channel Number	Frequency (MHZ)	Power (dBm) 1Uplink	Power (dBm) 2Uplink	Power (dBm) 3Uplink	Power (dBm) 4Uplink	Note
512	1850.2	29.8	26.9	24.8	23.7	Conducted, GMSK
661	1880.0	29.9	26.9	24.9	23.9	Conducted, GMSK
810	1909.8	29.8	26.8	25.0	23.9	Conducted, GMSK

GPRS1900 - Calculated Value with consideration for Uplink time slots:

Channel Number	Frequency (MHZ)	Power (dBm) 1Uplink	Power (dBm) 2Uplink	Power (dBm) 3Uplink	Power (dBm) 4Uplink	Note
512	1850.2	20.8	20.9	20.5	20.7	Conducted, GMSK
661	1880.0	20.9	20.9	20.6	20.9	Conducted, GMSK
810	1909.8	20.8	20.8	20.7	20.9	Conducted, GMSK

EDGE1900 - Measured Average Power without consideration for Uplink time slots:

Channel Number	Frequency (MHZ)	Power (dBm) 1Uplink	Power (dBm) 2Uplink	Power (dBm) 3Uplink	Power (dBm) 4Uplink	Note
512	1850.2	29.8	26.9	24.8	23.7	Conducted, GMSK
661	1880.0	29.9	26.9	24.9	23.9	Conducted, GMSK
810	1909.8	29.8	26.8	25.0	23.9	Conducted, GMSK

EDGE1900 - Calculated Value with consideration for Uplink time slots:

Channel Number	Frequency (MHZ)	Power (dBm) 1Uplink	Power (dBm) 2Uplink	Power (dBm) 3Uplink	Power (dBm) 4Uplink	Note
512	1850.2	20.8	20.9	20.5	20.7	Conducted, GMSK
661	1880.0	20.9	20.9	20.6	20.9	Conducted, GMSK
810	1909.8	20.8	20.8	20.7	20.9	Conducted, GMSK

Note:**Scale factor for uplink time slot:**

- 1 Uplink: time slot ratio = 8:1 => $10 \cdot \log(8/1) = 9.03 \text{ dB}$
- 2 Uplink: time slot ratio = 8:2 => $10 \cdot \log(8/2) = 6.02 \text{ dB}$
- 3 Uplink: time slot ratio = 8:3 => $10 \cdot \log(8/3) = 4.26 \text{ dB}$
- 4 Uplink: time slot ratio = 8:4 => $10 \cdot \log(8/4) = 3.01 \text{ dB}$

EDGE (MCS9 ~ 8PSK):**EDGE1900 - Measured Average Power without consideration for Uplink time slots:**

Channel Number	Frequency (MHZ)	Power (dBm) 1Uplink	Power (dBm) 2Uplink	Power (dBm) 3Uplink	Power (dBm) 4Uplink	Note
512	1850.2	25.9	24.3	23.5	22.3	Conducted, 8PSK
661	1880.0	25.9	24.2	23.5	22.3	Conducted, 8PSK
810	1909.8	25.8	24.2	23.4	22.3	Conducted, 8PSK

EDGE1900 - Calculated Value with consideration for Uplink time slots:

Channel Number	Frequency (MHZ)	Power (dBm) 1Uplink	Power (dBm) 2Uplink	Power (dBm) 3Uplink	Power (dBm) 4Uplink	Note
512	1850.2	16.9	18.3	19.2	19.3	Conducted, 8PSK
661	1880.0	16.9	18.2	19.2	19.3	Conducted, 8PSK
810	1909.8	16.8	18.2	19.1	19.3	Conducted, 8PSK

Note:**Scale factor for uplink time slot:**

1. 1 Uplink: time slot ratio = 8:1 => $10 \cdot \log(8/1) = 9.03 \text{ dB}$
2. 2 Uplink: time slot ratio = 8:2 => $10 \cdot \log(8/2) = 6.02 \text{ dB}$
3. 3 Uplink: time slot ratio = 8:3 => $10 \cdot \log(8/3) = 4.26 \text{ dB}$
4. 4 Uplink: time slot ratio = 8:4 => $10 \cdot \log(8/4) = 3.01 \text{ dB}$

7.2.3. Conducted Average Power Measurement 3G:

Modes		HSDPA				HSUPA					WCDMA
Sets		1	2	3	4	1	2	3	4	5	Voice / RMC 12.2kbps
Band	Channel	Power [dBm]	Power [dBm]	Power [dBm]	Power [dBm]	Power [dBm]	Power [dBm]	Power [dBm]	Power [dBm]	Power [dBm]	Power [dBm]
1900 (Band 2)	9262 9662	22.3	21.9	21.9	21.9	22.0	20.4	21.1	20.6	22.3	22.4
	9400 9800	22.3	22.1	22.0	22.0	21.5	20.6	20.9	20.4	22.1	22.4
	9538 9938	22.2	22.1	22.1	22.1	21.7	20.6	21.1	20.8	22.3	22.3
850 (Band 5)	4132 4357	23.9	23.5	23.0	22.9	23.3	21.7	22.4	22.5	23.7	24.0
	4183 4408	23.8	23.5	23.0	22.9	23.8	22.2	21.8	22.0	23.8	23.9
	4233 4458	23.9	23.5	23.0	22.9	23.5	21.9	22.5	22.1	23.6	24.0
β_c		2	12	15	15	11	6	15	2	15	
β_d		15	15	8	4	15	15	9	15	15	
$\Delta ACK, \Delta NACK, \Delta CQI$		8	8	8	8	8	8	8	8	8	
AGV		-	-	-	-	20	12	15	17	21	

The module power levels were measured in both HSPA and 3G RMC 12.2kbps modes and compared to ensure the correct mode of operation had been established.

The following tables taken from FCC 3G SAR procedures (KDB 941225 D01 SAR test for 3G devices v02) below were applied using an Agilent 8960 series 10 wireless communications test set which supports 3G / HSDPA release 5 / HSPA release 6.

Sub-test Setup for Release 5 HSDPA

Sub-test	β_c	β_d	B_d (SF)	β_c/β_d	$\beta_{hs}^{(1)}$	SM (dB) ⁽²⁾
1	2/15	15/15	64	2/15	4/15	0.0
2	12/15 ⁽³⁾	15/15 ⁽³⁾	64	12/15 ⁽³⁾	24/15	1.0
3	15/15	8/15	64	15/8	30/15	1.5
4	15/15	4/15	64	15/4	30/15	1.5

Note 1: Δ_{ACK} , Δ_{NACK} and $\Delta_{CQI} = 8 \Leftrightarrow A_{hs} = \beta_{hs}/\beta_c = 30/15 \Leftrightarrow \beta_{hs} = 30/15 * \beta_c$

Note 2: CM = 1 for $\beta_c/\beta_d = 12/15$, $B_{hs}/\beta_c = 24/15$

Note 3: For subtest 2 the β_c/β_d ratio of 12/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signalled gain factors for the reference TFC (TF1, TF1) to $\beta_c = 11/15$ and $\beta_d = 15/15$

Sub-test Setup for Release 6 HSUPA

Sub-test	β_c	β_d	B_d (SF)	β_c/β_d	$\beta_{hs}^{(1)}$	B_{oc}	B_{od}	B_{od} (SF)	B_{od} (codes)	CM ⁽²⁾ (dB)	Power Back- off (dB)	AG ⁽⁴⁾ Ind ex	E- TFC I
1	11/15 ⁽³⁾	15/15 ⁽³⁾	64	11/15 ⁽³⁾	22/15	209/225	1039/225	4	1	1.0	0.0	20	75
2	6/15	15/15	64	6/15	12/15	12/15	94/75	4	1	3.0	2.0	12	67
3	15/15	9/15	64	15/9	30/15	31/15	B_{al1} : 47/15 B_{al2} : 47/15	4	1	2.0	1.0	15	92
4	2/15	15/15	64	2/15	2/15	2/15	56/75	4	1	3.0	2.0	17	71
5	15/15 ⁽⁴⁾	15/15 ⁽⁴⁾	64	15/15 ⁽⁴⁾	24/15	24/15	134/15	4	1	1.0	0.0	21	81

Note 1: Δ_{ACK} , Δ_{NACK} and $\Delta_{CQI} = 8 \Leftrightarrow A_{hs} = \beta_{hs}/\beta_c = 30/15 \Leftrightarrow \beta_{hs} = 30/15 * \beta_c$

Note 2: CM = 1 for $\beta_c/\beta_d = 12/15$, $B_{hs}/\beta_c = 24/15$. For all other combinations of DPDCH, DPCCH, HS-DPCCH, E-DPDCH AND E-DPCCH for the Power Back-off is based on the relative CM difference.

Note 3: For subtest 1 the β_c/β_d ratio of 11/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signalled gain factors for the reference TFC (TF1, TF1) to $\beta_c = 10/15$ and $\beta_d = 15/15$.

Note 4: For subtest 5 the β_c/β_d ratio of 15/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signalled gain factors for the reference TFC (TF1, TF1) to $\beta_c = 14/15$ and $\beta_d = 15/15$.

Note 5: Testing UE using E-DPDCH Physical Layer category 1 Sub-test 3 is not required according to TS 25.306 Table 5.1g.

Note 6: B_{od} can not be set directly; it is set by Absolute Grant Value.

7.2.4. Conducted Average Power Measurements Wi-Fi 802.11b/g/n 802.11b/g

Channel Number	Frequency (MHZ)	TX Power (dBm)	Note
1	2412.0	13.7	2.4GHz 802.11b (1Mbps)
6	2437.0	14.2	
11	2462.0	14.3	
1	2412.0	13.5	2.4GHz 802.11b (11Mbps)
6	2437.0	13.8	
11	2462.0	14.0	
1	2412.0	10.5	2.4GHz 802.11g (6Mbps)
6	2437.0	11.5	
11	2462.0	11.5	
1	2412.0	10.3	2.4GHz 802.11g (54Mbps)
6	2437.0	11.2	
11	2462.0	11.4	

802.11n

Channel Number	Frequency (MHZ)	TX Power (dBm)	Note
1	2412.0	10.5	2.4GHz 802.11n (MCS0 6.5Mbps)
6	2437.0	11.4	
11	2462.0	10.6	
1	2412.0	10.4	2.4GHz 802.11n (MCS7 65Mbps)
6	2437.0	11.3	
11	2462.0	10.4	

**7.2.5. Conducted Average Power Measurements Wi-Fi 802.11a/n (5.0 GHz)
802.11a (5.0 GHz)**

Channel Number	Frequency (MHz)	TX Power (dBm) 6 Mbps	TX Power (dBm) 54 Mbps	Note
36*	5180.0	13.9	11.6	5.2 GHz
40	5200.0	13.6	11.7	
44	5220.0	14.0	11.4	
48*	5240.0	14.0	11.2	
52*	5260.0	14.0	11.6	5.3 GHz
56	5280.0	14.0	11.6	
60	5300.0	14.0	11.6	
64*	5320.0	13.7	11.8	
100	5500.0	13.7	11.3	5.6 GHz
104*	5520.0	13.2	11.4	
108	5540.0	13.7	11.5	
112	5560.0	14.1	11.6	
116*	5580.0	14.2	11.9	
120	5600.0	14.2	11.3	
124*	5620.0	13.9	11.8	
128	5640.0	13.9	11.7	
132	5660.0	13.8	11.6	
136*	5680.0	13.8	11.6	
140	5700.0	14.1	12.0	
149*	5745.0	13.7	11.4	5.8 GHz
153	5765.0	13.5	10.9	
157*	5785.0	13.3	11.4	
161	5805.0	13.3	11.3	
165*	5825.0	13.4	11.2	

* Default test Channels

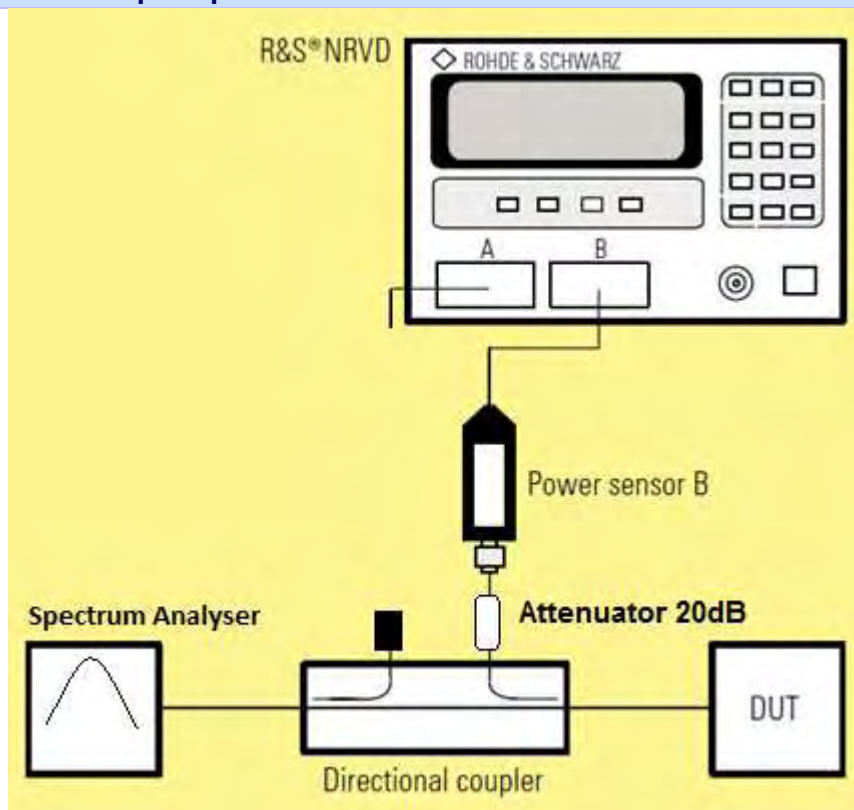
802.11n (5.0 GHz) (HT20)				
Channel Number	Frequency (MHZ)	TX Power (dBm) 6.5 Mbps	TX Power (dBm) 65 Mbps	Note
36*	5180.0	10.7	10.5	5.2 GHz
40	5200.0	10.2	10.1	
44	5220.0	10.8	10.6	
48*	5240.0	10.5	10.4	
52*	5260.0	10.6	10.5	5.3 GHz
56	5280.0	10.5	10.4	
60	5300.0	10.7	10.5	
64*	5320.0	10.3	10.2	
100	5500.0	10.4	10.3	5.6 GHz
104*	5520.0	9.7	9.6	
108	5540.0	9.7	9.6	
112	5560.0	9.9	10.1	
116*	5580.0	10.4	10.3	
120	5600.0	9.8	9.7	
124*	5620.0	10.3	10.0	
128	5640.0	10.6	10.5	
132	5660.0	10.6	10.5	
136*	5680.0	10.8	10.5	
140	5700.0	10.6	10.4	
149*	5745.0	10.3	9.6	5.8 GHz
153	5765.0	9.8	9.6	
157*	5785.0	10.2	10.1	
161	5805.0	10.3	10.1	
165*	5825.0	10.2	10.1	

* Default test Channels

802.11n (5.0 GHz) (HT40)

Channel Number	Frequency (MHZ)	TX Power (dBm) 13.5 Mbps	TX Power (dBm) 135 Mbps	Note
38	5190.0	9.5	9.4	5.2 GHz
46	5230.0	9.7	9.6	
54	5270.0	9.4	9.4	5.3 GHz
62	5310.0	9.6	9.5	
102	5510.0	9.3	9.2	5.6 GHz
110	5550.0	9.3	9.0	
118	5590.0	9.1	9.1	
126	5630.0	9.6	9.0	
134	5670.0	9.5	9.3	
151	5755.0	9.7	9.3	5.8 GHz
159	5795.0	9.1	9.0	

Test setup for power measurements



7.3. Test Results

For All SAR measurement in this report the SAR limit tested to is 1.6 W/Kg

7.3.1. Specific Absorption Rate - GSM 850 Head Configuration 1g**Test Summary:**

Tissue Volume:	1g
Maximum Measured Level (W/kg):	0.718
Maximum Reported Level (W/kg):	0.863

Environmental Conditions:

Temperature Variation in Lab (°C):	24.0 to 24.0
Temperature Variation in Liquid (°C):	23.0 to 23.0

Results:

Scan Number	EUT Position	Channel Number	Meas. Avg Power (dBm)	Max Rated Power (dBm)	Meas. Level (W/kg)	Reported SAR (W/kg)	Note(s)	Mod.
1	Touch Left	190	23.9	24.7	0.714	0.858	1	GSMK
2	Tilt Left	190	23.9	24.7	0.435	0.523	1	GSMK
3	Touch Right	190	23.9	24.7	0.718	0.863	1	GSMK
4	Tilt Right	190	23.9	24.7	0.453	0.545	1	GSMK
5	Touch Right	128	24.0	24.7	0.636	0.747	1	GSMK
6	Touch Right	251	23.9	24.7	0.717	0.862	1	GSMK
7	Touch Right Antenna Extended	190	23.9	24.7	0.669	0.804	1, 2	GSMK

Note(s):

1. Voice Mode
2. Worst Case configuration repeated with DTV Antenna Extended.

7.3.2. Specific Absorption Rate - GPRS 850 Hotspot Mode Configuration 1g**Test Summary:**

Tissue Volume:	1g
Maximum Measured Level (W/kg):	1.250
Maximum Reported Level (W/kg):	1.469

Environmental Conditions:

Temperature Variation in Lab (°C):	24.0 to 24.0
Temperature Variation in Liquid (°C):	23.1 to 23.1

Results:

Scan Number	EUT Position	Channel Number	Meas. Avg Power (dBm)	Max Rated Power (dBm)	Meas. Level (W/kg)	Reported SAR (W/kg)	Note(s)	Mod.
8	Front	190	24.8	25.7	0.988	1.216	1, 2	GSMK
9	Front	128	25.0	25.7	1.040	1.222	1, 2	GSMK
10	Front	251	24.9	25.7	1.000	1.202	1, 2	GSMK
11	Back	190	24.8	25.7	1.190	1.464	1, 2	GSMK
12	Back	128	25.0	25.7	1.250	1.469	1, 2, 4	GSMK
13	Back	251	24.9	25.7	1.110	1.335	1, 2	GSMK
14	Left Hand Side	190	24.8	25.7	0.732	0.901	1, 2	GSMK
15	Right Hand Side	190	24.8	25.7	0.759	0.934	1, 2	GSMK
16	Bottom	190	24.8	25.7	0.208	0.256	1, 2	GSMK
17	Back Extended	128	25.0	25.7	0.738	0.867	1, 2, 3	GSMK

Note(s):

1. Data - SAR measurements were performed using 4 uplink timeslots
2. SAR measurements were performed with the closest edge of the EUT at a separation distance of 10mm from the 'SAM' phantom flat section.
3. Worst Case configuration repeated with DTV Antenna Extended.
4. As per 865664 D01, the highest SAR measured > 0.8 W/kg has been re-measured and included in the report in section 2.3 under SAR Measurement Variability and Measurement Uncertainty Analysis Results Table.

*KDB 941225 D03 - SAR is not required for EDGE technology when the maximum average output power is lower than that measured on the corresponding GPRS channels.

7.3.3. Specific Absorption Rate - GSM 850 Body-Worn Configuration 1g**Test Summary:**

Tissue Volume:	1g
Maximum Measured Level (W/kg):	0.851
Maximum Reported Level (W/kg):	1.000

Environmental Conditions:

Temperature Variation in Lab (°C):	24.0 to 24.0
Temperature Variation in Liquid (°C):	23.1 to 23.1

Results:

Scan Number	EUT Position	Channel Number	Meas. Avg Power (dBm)	Max Rated Power (dBm)	Meas. Level (W/kg)	Reported SAR (W/kg)	Note(s)	Mod.
18	Front	128	24.0	24.7	0.782	0.919	1, 2	GSMK
19	Back	128	24.0	24.7	0.851	1.000	1, 2	GSMK
20	Back	190	23.9	24.7	0.815	0.980	1, 2	GSMK
21	Back	251	23.9	24.7	0.708	0.851	1, 2	GSMK
22	Back Extended	128	24.0	24.7	0.443	0.520	1, 2, 3	GSMK

Note(s):

1. Voice Mode
2. SAR measurements were performed with the closest edge of the EUT at a separation distance of 15mm from the 'SAM' phantom flat section.
3. Worst Case configuration repeated with DTV Antenna Extended.

7.3.4. Specific Absorption Rate - PCS 1900 Head Configuration 1g**Test Summary:**

Tissue Volume:	1g
Maximum Measured Level (W/kg):	0.202
Maximum Reported Level (W/kg):	0.249

Environmental Conditions:

Temperature Variation in Lab (°C):	24.0 to 24.0
Temperature Variation in Liquid (°C):	22.8 to 22.8

Results:

Scan Number	EUT Position	Channel Number	Meas. Avg Power (dBm)	Max Rated Power (dBm)	Meas. Level (W/kg)	Reported SAR (W/kg)	Note(s)	Mod.
23	Touch Left	661	20.9	21.7	0.146	0.176	1	GSMK
24	Tilt Left	661	20.9	21.7	0.060	0.073	1	GSMK
25	Touch Right	661	20.9	21.7	0.171	0.206	1	GSMK
26	Tilt Right	661	20.9	21.7	0.061	0.074	1	GSMK
27	Touch Right	512	20.8	21.7	0.176	0.217	1	GSMK
28	Touch Right	810	20.8	21.7	0.189	0.233	1	GSMK
29	Touch Right Antenna Extended	810	20.8	21.7	0.202	0.249	1, 2	GSMK

Note(s):

1. Voice Mode
2. Worst case configuration repeated with DTV Antenna Extended.

7.3.5. Specific Absorption Rate - GPRS 1900 Hotspot Mode Configuration 1g**Test Summary:**

Tissue Volume:	1g
Maximum Measured Level (W/kg):	0.977
Maximum Reported Level (W/kg):	1.175

Environmental Conditions:

Temperature Variation in Lab (°C):	24.0 to 24.0
Temperature Variation in Liquid (°C):	23.3 to 23.3

Results:

Scan Number	EUT Position	Channel Number	Meas. Avg Power (dBm)	Max Rated Power (dBm)	Meas. Level (W/kg)	Reported SAR (W/kg)	Note(s)	Mod.
30	Front	661	20.9	21.7	0.672	0.808	1, 2	GSMK
31	Back	661	20.9	21.7	0.813	0.977	1, 2	GSMK
32	Back	512	20.7	21.7	0.759	0.956	1, 2	GSMK
33	Back	810	20.9	21.7	0.863	1.038	1, 2	GSMK
34	Left Hand Side	661	20.9	21.7	0.087	0.104	1, 2	GSMK
35	Right Hand Side	661	20.9	21.7	0.099	0.119	1, 2	GSMK
36	Bottom	661	20.9	21.7	0.878	1.056	1, 2	GSMK
37	Bottom	512	20.7	21.7	0.769	0.968	1, 2	GSMK
38	Bottom	810	20.9	21.7	0.977	1.175	1, 2, 3	GSMK

Note(s):

1. Data - SAR measurements were performed using 4 uplink timeslots
2. SAR measurements were performed with the closest edge of the EUT at a separation distance of 10mm from the 'SAM' phantom flat section.
3. As per 865664 D01, the highest SAR measured > 0.8 W/kg has been re-measured and included in the report in section 2.3 under SAR Measurement Variability and Measurement Uncertainty Analysis Results Table.

*Bottom edge configuration with DTV Antenna Extended is NOT required, as DTV Antenna to Bottom edge separation is >130mm.

*KDB 941225 D03 - SAR is not required for EDGE technology when the maximum average output power is lower than that measured on the corresponding GPRS channels

7.3.6. Specific Absorption Rate - PCS 1900 Body-Worn Configuration 1g**Test Summary:**

Tissue Volume:	1g
Maximum Measured Level (W/kg):	0.366
Maximum Reported Level (W/kg):	0.450

Environmental Conditions:

Temperature Variation in Lab (°C):	24.0 to 24.0
Temperature Variation in Liquid (°C):	23.3 to 23.3

Results:

Scan Number	EUT Position	Channel Number	Meas. Avg Power (dBm)	Max Rated Power (dBm)	Meas. Level (W/kg)	Reported SAR (W/kg)	Note(s)	Mod.
39	Front	810	20.8	21.7	0.271	0.333	1, 2	GSMK
40	Back	810	20.8	21.7	0.366	0.450	1, 2	GSMK
41	Back Extended	810	20.8	21.7	0.364	0.448	1, 2, 3	GSMK

Note(s):

1. Voice Mode
2. SAR measurements were performed with the closest edge of the EUT at a separation distance of 15mm from the 'SAM' phantom flat section.
3. Worst Case configuration repeated with DTV Antenna Extended.

7.3.7. Specific Absorption Rate – UMTS FDD 2 Head Configuration 1g**Test Summary:**

Tissue Volume:	1g
Maximum Measured Level (W/kg):	0.231
Maximum Reported Level (W/kg):	0.278

Environmental Conditions:

Temperature Variation in Lab (°C):	24.0 to 24.0
Temperature Variation in Liquid (°C):	22.8 to 22.8

Results:

Scan Number	EUT Position	Channel Number	Meas. Avg Power (dBm)	Max Rated Power (dBm)	Meas. Level (W/kg)	Reported SAR (W/kg)	Note(s)	Mod.
42	Touch Left	9400	22.4	23.1	0.188	0.221	1	QPSK
43	Tilt Left	9400	22.4	23.1	0.084	0.099	1	QPSK
44	Touch Right	9400	22.4	23.1	0.223	0.262	1	QPSK
45	Tilt Right	9400	22.4	23.1	0.083	0.097	1	QPSK
46	Touch Right	9262	22.4	23.1	0.185	0.217	1	QPSK
47	Touch Right	9538	22.3	23.1	0.231	0.278	1	QPSK
48	Touch Right Antenna Extended	9538	22.3	23.1	0.229	0.275	1, 2	QPSK

Note(s):

1. Circuit Switch (CS) - RMC 12.2kbps with Test loop mode 1 and TPC bits configured to All "1's"
2. Worst Case configuration repeated with DTV Antenna Extended.

*KDB 941225 - SAR is not required for RMC+HSPA (HSDPA/HSUPA) channels when the maximum average output power is less than ¼ dB higher than that measured on the corresponding RMC channels.

7.3.8. Specific Absorption Rate – UMTS FDD 2 Hotspot Mode Configuration 1g

Test Summary:

Tissue Volume:	1g
Maximum Measured Level (W/kg):	0.899
Maximum Reported Level (W/kg):	1.081

Environmental Conditions:

Temperature Variation in Lab (°C):	24.0 to 24.0
Temperature Variation in Liquid (°C):	23.3 to 23.3

Results:

Scan Number	EUT Position	Channel Number	Meas. Avg Power (dBm)	Max Rated Power (dBm)	Meas. Level (W/kg)	Reported SAR (W/kg)	Note(s)	Mod.
49	Front	9400	22.4	23.1	0.653	0.767	1, 2	QPSK
50	Back	9400	22.4	23.1	0.778	0.914	1, 2	QPSK
51	Left Hand Side	9400	22.4	23.1	0.089	0.105	1, 2	QPSK
52	Right Hand Side	9400	22.4	23.1	0.098	0.115	1, 2	QPSK
53	Bottom	9400	22.4	23.1	0.866	1.017	1, 2	QPSK
54	Bottom	9262	22.4	23.1	0.680	0.799	1, 2	QPSK
55	Bottom	9538	22.3	23.1	0.899	1.081	1, 2, 3	QPSK

Note(s):

1. Circuit Switch (CS) - RMC 12.2kbps with Test loop mode 1 and TPC bits configured to All "1's"
2. SAR measurements were performed with the closest edge of the EUT at a separation distance of 10mm from the 'SAM' phantom flat section.
3. As per 865664 D01, the highest SAR measured > 0.8 W/kg has been re-measured and included in the report in section 2.3 under SAR Measurement Variability and Measurement Uncertainty Analysis Results Table.

*Bottom edge configuration with DTV Antenna Extended is NOT required, as DTV Antenna to Bottom edge separation is >130mm.

*KDB 941225 - SAR is not required for RMC+HSPA (HSDPA/HSUPA) channels when the maximum average output power is less than ¼ dB higher than that measured on the corresponding RMC channels.

7.3.9. Specific Absorption Rate – UMTS FDD 2 Body-Worn Configuration 1g**Test Summary:**

Tissue Volume:	1g
Maximum Measured Level (W/kg):	0.447
Maximum Reported Level (W/kg):	0.537

Environmental Conditions:

Temperature Variation in Lab (°C):	24.0 to 24.0
Temperature Variation in Liquid (°C):	23.3 to 23.3

Results:

Scan Number	EUT Position	Channel Number	Meas. Avg Power (dBm)	Max Rated Power (dBm)	Meas. Level (W/kg)	Reported SAR (W/kg)	Note(s)	Mod.
56	Front	9538	22.3	23.1	0.332	0.399	1, 2	QPSK
57	Back	9538	22.3	23.1	0.440	0.529	1, 2	QPSK
58	Back Extended	9538	22.3	23.1	0.447	0.537	1, 2, 3	QPSK

Note(s):

1. Circuit Switch (CS) - RMC 12.2kbps with Test loop mode 1 and TPC bits configured to All "1's"
2. SAR measurements were performed with the closest edge of the EUT at a separation distance of 15mm from the 'SAM' phantom flat section.
3. Worst Case configuration repeated with DTV Antenna Extended.

*KDB 941225 - SAR is not required for RMC+HSPA (HSDPA/HSUPA) channels when the maximum average output power is less than ¼ dB higher than that measured on the corresponding RMC channels.

7.3.10. Specific Absorption Rate – UMTS FDD 5 Head Configuration 1g Test Summary:

Tissue Volume:	1g
Maximum Measured Level (W/kg):	0.794
Maximum Reported Level (W/kg):	0.891

Environmental Conditions:

Temperature Variation in Lab (°C):	24.0 to 24.0
Temperature Variation in Liquid (°C):	23.0 to 23.0

Results:

Scan Number	EUT Position	Channel Number	Meas. Avg Power (dBm)	Max Rated Power (dBm)	Meas. Level (W/kg)	Reported SAR (W/kg)	Note(s)	Mod.
59	Touch Left	4183	23.9	24.5	0.757	0.869	1	QPSK
60	Tilt Left	4183	23.9	24.5	0.423	0.486	1	QPSK
61	Touch Right	4183	23.9	24.5	0.711	0.816	1	QPSK
62	Tilt Right	4183	23.9	24.5	0.449	0.516	1	QPSK
63	Touch Left	4132	24.0	24.5	0.699	0.784	1	QPSK
64	Touch Left	4233	24.0	24.5	0.794	0.891	1	QPSK
65	Touch Left Extended	4233	24.0	24.5	0.695	0.780	1, 2	QPSK

Note(s):

1. Circuit Switch (CS) - RMC 12.2kbps with Test loop mode 1 and TPC bits configured to All "1's"
2. Worst Case configuration repeated with DTV Antenna Extended.

*KDB 941225 - SAR is not required for RMC+HSPA (HSDPA/HSUPA) channels when the maximum average output power is less than ¼ dB higher than that measured on the corresponding RMC channels.

7.3.11. Specific Absorption Rate – UMTS FDD 5 Hotspot Mode Configuration 1g Test Summary:

Tissue Volume:	1g
Maximum Measured Level (W/kg):	0.955
Maximum Reported Level (W/kg):	1.072

Environmental Conditions:

Temperature Variation in Lab (°C):	24.0 to 24.0
Temperature Variation in Liquid (°C):	23.1 to 23.1

Results:

Scan Number	EUT Position	Channel Number	Meas. Avg Power (dBm)	Max Rated Power (dBm)	Meas. Level (W/kg)	Reported SAR (W/kg)	Note(s)	Mod.
66	Front	4183	23.9	24.5	0.780	0.896	1, 2	QPSK
67	Back	4183	23.9	24.5	0.824	0.946	1, 2	QPSK
68	Back	4132	24.0	24.5	0.955	1.072	1, 2, 4	QPSK
69	Back	4233	24.0	24.5	0.935	1.049	1, 2	QPSK
70	Left Hand Side	4183	23.9	24.5	0.606	0.696	1, 2	QPSK
71	Right Hand Side	4183	23.9	24.5	0.693	0.796	1, 2	QPSK
72	Bottom	4183	23.9	24.5	0.179	0.206	1, 2	QPSK
73	Back Extended	4132	24.0	24.5	0.673	0.755	1, 2, 3	QPSK

Note(s):

1. Circuit Switch (CS) - RMC 12.2kbps with Test loop mode 1 and TPC bits configured to All "1's"
2. SAR measurements were performed with the closest edge of the EUT at a separation distance of 10mm from the 'SAM' phantom flat section.
3. Worst Case configuration repeated with DTV Antenna Extended.
4. As per 865664 D01, the highest SAR measured > 0.8 W/kg has been re-measured and included in the report in section 2.3 under SAR Measurement Variability and Measurement Uncertainty Analysis Results Table.

*KDB 941225 - SAR is not required for RMC+HSPA (HSDPA/HSUPA) channels when the maximum average output power is less than ¼ dB higher than that measured on the corresponding RMC channels.

7.3.12. Specific Absorption Rate – UMTS FDD 5 Body-Worn Configuration 1g**Test Summary:**

Tissue Volume:	1g
Maximum Measured Level (W/kg):	0.754
Maximum Reported Level (W/kg):	0.846

Environmental Conditions:

Temperature Variation in Lab (°C):	24.0 to 24.0
Temperature Variation in Liquid (°C):	24.0 to 23.0

Results:

Scan Number	EUT Position	Channel Number	Meas. Avg Power (dBm)	Max Rated Power (dBm)	Meas. Level (W/kg)	Reported SAR (W/kg)	Note(s)	Mod.
74	Front	4132	24.0	24.5	0.682	0.765	1, 2	QPSK
75	Back	4132	24.0	24.5	0.754	0.846	1, 2	QPSK
76	Back Extended	4132	24.0	24.5	0.434	0.487	1, 2, 3	QPSK

Note(s):

1. Circuit Switch (CS) - RMC 12.2kbps with Test loop mode 1 and TPC bits configured to All "1's"
2. SAR measurements were performed with the closest edge of the EUT at a separation distance of 15mm from the 'SAM' phantom flat section.
3. Worst Case configuration repeated with DTV Antenna Extended.

*KDB 941225 - SAR is not required for RMC+HSPA (HSDPA/HSUPA) channels when the maximum average output power is less than ¼ dB higher than that measured on the corresponding RMC channels.

7.3.13. Specific Absorption Rate - Wi-Fi 802.11b 2.4 GHz Head Configuration 1g Test Summary:

Tissue Volume:	1g
Maximum Measured Level (W/kg):	0.562
Maximum Reported Level (W/kg):	0.602

Environmental Conditions:

Temperature Variation in Lab (°C):	24.0 to 24.0
Temperature Variation in Liquid (°C):	23.9 to 23.9

Results:

Scan Number	EUT Position	Channel Number	Meas. Avg Power (dBm)	Max Rated Power (dBm)	Meas. Level (W/kg)	Reported SAR (W/kg)	Note(s)	Mod.
77	Touch Left	6	14.2	14.5	0.323	0.346	1	DBPSK
78	Tilt Left	6	14.2	14.5	0.195	0.209	1	DBPSK
79	Touch Right	6	14.2	14.5	0.562	0.602	1	DBPSK
80	Tilt Right	6	14.2	14.5	0.352	0.377	1	DBPSK
81	Touch Right	1	13.7	14.5	0.490	0.589	1	DBPSK
82	Touch Right	11	14.3	14.5	0.459	0.481	1	DBPSK
83	Touch Right Antenna Extended	6	14.2	14.5	0.506	0.542	1, 2	DBPSK

Note(s):

1. WLAN 802.11b 1Mbps
2. Worst Case configuration repeated with DTV Antenna Extended.

*KDB 248227 - SAR is not required for 802.11g/n channels when the maximum average output power is equal to that measured on the corresponding 802.11b channels.

7.3.14. Specific Absorption Rate - Wi-Fi 802.11b 2.4 GHz Hotspot Mode Configuration 1g

Test Summary:

Tissue Volume:	1g
Maximum Measured Level (W/kg):	0.149
Maximum Reported Level (W/kg):	0.179

Environmental Conditions:

Temperature Variation in Lab (°C):	24.0 to 24.0
Temperature Variation in Liquid (°C):	22.8 to 22.8

Results:

Scan Number	EUT Position	Channel Number	Meas. Avg Power (dBm)	Max Rated Power (dBm)	Meas. Level (W/kg)	Reported SAR (W/kg)	Note(s)	Mod.
84	Front	6	14.2	14.5	0.128	0.137	1, 2	DBPSK
85	Back	6	14.2	14.5	0.081	0.086	1, 2	DBPSK
86	Left Hand Side	6	14.2	14.5	0.078	0.083	1, 2	DBPSK
87	Top	6	14.2	14.5	0.026	0.028	1, 2	DBPSK
88	Front	1	13.7	14.5	0.149	0.179	1, 2	DBPSK
89	Front	11	14.3	14.5	0.125	0.131	1, 2	DBPSK
90	Front Antenna Extended	1	13.7	14.5	0.116	0.139	1, 2	DBPSK

Note(s):

1. WLAN 802.11b 1Mbps
2. SAR measurements were performed with the closest edge of the EUT at a separation distance of 10mm from the 'SAM' phantom flat section.
3. Worst Case configuration repeated with DTV Antenna Extended.

*KDB 248227 - SAR is not required for 802.11g/n channels when the maximum average output power is equal to that measured on the corresponding 802.11b channels.

7.3.15. Specific Absorption Rate - Wi-Fi 802.11b 2.4 GHz Body-Worn Configuration 1g Test Summary:

Tissue Volume:	1g
Maximum Measured Level (W/kg):	0.079
Maximum Reported Level (W/kg):	0.083

Environmental Conditions:

Temperature Variation in Lab (°C):	24.0 to 24.0
Temperature Variation in Liquid (°C):	23.5 to 23.5

Results:

Scan Number	EUT Position	Channel Number	Meas. Avg Power (dBm)	Max Rated Power (dBm)	Meas. Level (W/kg)	Reported SAR (W/kg)	Note(s)	Mod.
91	Front	6	14.2	14.5	0.072	0.077	1, 2	DBPSK
92	Back	6	14.2	14.5	0.049	0.052	1, 2	DBPSK
93	Front	1	13.7	14.5	0.066	0.080	1, 2	DBPSK
94	Front	11	14.3	14.5	0.079	0.083	1, 2	DBPSK
95	Front Antenna Extended	11	14.3	14.5	0.078	0.081	1, 2, 3	DBPSK

Note(s):

1. WLAN 802.11b 1Mbps
2. SAR measurements were performed with the closest edge of the EUT at a separation distance of 15mm from the 'SAM' phantom flat section.
3. Worst Case configuration repeated with DTV Antenna Extended.

*KDB 248227 - SAR is not required for 802.11g/n channels when the maximum average output power is equal to that measured on the corresponding 802.11b channels.

7.3.16. Specific Absorption Rate - Wi-Fi 802.11a 5.0 GHz Head Configuration 1g Test Summary:

Tissue Volume:	1g
Maximum Measured Level (W/kg):	0.718
Maximum Reported Level (W/kg):	0.969

Environmental Conditions:

Temperature Variation in Lab (°C):	24.0 to 24.0
Temperature Variation in Liquid (°C):	23.0 to 23.0

Results:

Scan Number	EUT Position	Channel Number	Meas. Avg Power (dBm)	Max Rated Power (dBm)	Meas. Level (W/kg)	Reported SAR (W/kg)	Note(s)	Mod.
96	Touch Left	48	14.0	14.5	0.404	0.453	1, 2	BPSK
97	Tilt Left	48	14.0	14.5	0.414	0.465	1, 2	BPSK
98	Touch Right	48	14.0	14.5	0.437	0.490	1, 2	BPSK
99	Tilt Right	48	14.0	14.5	0.495	0.555	1, 2	BPSK
100	Tilt Right	52	14.0	14.5	0.514	0.577	1, 2	BPSK
101	Tilt Right	116	14.2	14.5	0.463	0.496	1	BPSK
102	Tilt Right	104	13.2	14.5	0.718	0.969	1	BPSK
103	Tilt Right	124	13.9	14.5	0.438	0.503	1	BPSK
104	Tilt Right	136	13.8	14.5	0.378	0.444	1	BPSK
105	Tilt Right	149	13.7	14.5	0.350	0.421	1, 2	BPSK
106	Tilt Right Antenna Extended	104	13.2	14.5	0.508	0.685	1, 3	BPSK

Note(s):

1. WLAN 802.11a 6Mbps
2. For frequency bands with an operating range of < 100 MHz, when the reported SAR for the highest output power channel within is ≤ 0.8 W/kg, SAR for the remaining channels is not required as Per KDB 447498, section 4.3.3
3. Worst Case configuration repeated with DTV Antenna Extended.

*KDB 248227 - SAR is not required for 802.11n HT20 /HT40 channels as the maximum average output power is less than ¼ dB higher than 802.11a.

7.3.17. Specific Absorption Rate - Wi-Fi 802.11a 5.0 GHz Hotspot Mode Configuration 1g

Test Summary:

Tissue Volume:	1g
Maximum Measured Level (W/kg):	0.250
Maximum Reported Level (W/kg):	0.281

Environmental Conditions:

Temperature Variation in Lab (°C):	24.0 to 24.0
Temperature Variation in Liquid (°C):	23.5 to 23.5

Results:

Scan Number	EUT Position	Channel Number	Meas. Avg Power (dBm)	Max Rated Power (dBm)	Meas. Level (W/kg)	Reported SAR (W/kg)	Note(s)	Mod.
107	Front	48	14.0	14.5	0.091	0.102	1, 2, 3	BPSK
108	Back	48	14.0	14.5	0.167	0.187	1, 2, 3	BPSK
109	Left Hand Side	48	14.0	14.5	0.064	0.072	1, 2, 3	BPSK
110	Top	48	14.0	14.5	0.250	0.281	1, 2, 3	BPSK
111	Top	52	14.0	14.5	0.233	0.261	1, 2, 3	BPSK
112	Top	116	14.2	14.5	0.181	0.194	1, 2, 4	BPSK
113	Top	149	13.7	14.5	0.134	0.161	1, 2, 3	BPSK

Note(s):

1. WLAN 802.11a 6Mbps
2. SAR measurements were performed with the closest edge of the EUT at a separation distance of 10mm from the 'SAM' phantom flat section.
3. For frequency bands with an operating range of < 100 MHz, when the reported SAR for the highest output power channel within is ≤ 0.8 W/kg, SAR for the remaining channels is not required. Per KDB 447498, section 4.3.3
4. For frequency bands with an operating range of < 200 MHz, when the reported SAR for the highest output power channel within is ≤ 0.4 W/kg, SAR for the remaining channels is not required. Per KDB 447498, section 4.3.3

*Top edge configuration with DTV Antenna Extended is NOT required, as DTV Antenna Extended on Top edge is not achievable.

*KDB 248227 - SAR is not required for 802.11n HT20 /HT40 channels as the maximum average output power is less than ¼ dB higher than 802.11a.

7.3.18. Specific Absorption Rate - Wi-Fi 802.11a 5.0 GHz Body-Worn Configuration 1g Test Summary:

Tissue Volume:	1g
Maximum Measured Level (W/kg):	0.098
Maximum Reported Level (W/kg):	0.109

Environmental Conditions:

Temperature Variation in Lab (°C):	24.0 to 24.0
Temperature Variation in Liquid (°C):	23.5 to 23.5

Results:

Scan Number	EUT Position	Channel Number	Meas. Avg Power (dBm)	Max Rated Power (dBm)	Meas. Level (W/kg)	Reported SAR (W/kg)	Note(s)	Mod.
114	Front	48	14.0	14.5	0.058	0.065	1, 2, 4	BPSK
115	Back	48	14.0	14.5	0.090	0.101	1, 2, 4	BPSK
116	Back Extended	48	14.0	14.5	0.098	0.109	1, 2, 3, 4	BPSK

Note(s):

1. WLAN 802.11a 6Mbps
2. SAR measurements were performed with the closest edge of the EUT at a separation distance of 15mm from the 'SAM' phantom flat section.
3. Worst Case configuration repeated with DTV Antenna Extended.
4. For frequency bands with an operating range of < 100 MHz, when the reported SAR for the highest output power channel within is ≤ 0.8 W/kg, SAR for the remaining channels is not required. Per KDB 447498, section 4.3.3

*KDB 248227 - SAR is not required for 802.11n HT20 /HT40 channels as the maximum average output power is less than ¼ dB higher than 802.11a.

7.4. Simultaneous Transmission SAR Analysis

Simultaneous transmission analysis of worst cases is shown in the tables below.

Overall Worst Case:

1. WWAN+WLAN
2. WWAN+WPAN

	Reported SAR 1g (W/kg)			
	WWAN	WLAN	WPAN	Maximum Sum of SAR
EUT Position	GPRS850	Wi-Fi	Bluetooth 2.4 GHz	
Back	1.469	0.187		1.656
Back	1.469		0.184	1.653

Normal Analysis:

Head Configuration 1g – Worst cases measurements WWAN + WLAN

	Reported SAR 1g (W/Kg)					
	WWAN				WLAN	Sum of WWAN & WLAN
EUT Position	GSM850	PCS1900	FDD 2	FDD 5	Wi-Fi	
Touch Left	0.858				0.453	1.311
Touch Right	0.863				0.490	1.353
Tilt Left	0.523				0.465	0.988
Tilt Right	0.545				0.969	1.514
Touch Left		0.176			0.453	0.629
Touch Right		0.249			0.490	0.739
Tilt Left		0.073			0.465	0.538
Tilt Right		0.074			0.969	1.043
Touch Left			0.221		0.453	0.674
Touch Right			0.278		0.490	0.768
Tilt Left			0.099		0.465	0.564
Tilt Right			0.097		0.969	1.066
Touch Left				0.891	0.453	1.344
Touch Right				0.816	0.490	1.306
Tilt Left				0.486	0.465	0.951
Tilt Right				0.516	0.969	1.485

Simultaneous Transmission SAR Analysis (Continued)

Hotspot Mode Configuration 1g – Worst cases measurements WWAN+WLAN

	Reported SAR 1g (W/Kg)					Sum of WWAN & WLAN
	WWAN				WLAN	
EUT Position	GSM850	PCS1900	UMTS FDD 2	UMTS FDD 5	Wi-Fi	
Front	1.222				0.179	1.401
Back	1.469				0.187	1.656
Left Hand Side	0.901				0.083	0.984
Right Hand Side	0.934					0.934
Bottom	0.256					0.256
Top					0.281	0.281
Front		0.808			0.179	0.987
Back		1.038			0.187	1.225
Left Hand Side		0.104			0.083	0.187
Right Hand Side		0.119				0.119
Bottom		1.175				1.175
Top					0.281	0.281
Front			0.767		0.179	0.946
Back			0.914		0.187	1.101
Left Hand Side			0.105		0.083	0.188
Right Hand Side			0.115			0.115
Bottom			1.081			1.081
Top					0.281	0.281
Front				0.896	0.179	1.075
Back				1.072	0.187	1.259
Left Hand Side				0.696	0.083	0.779
Right Hand Side				0.796		0.796
Bottom				0.206		0.206
Top					0.281	0.281

Body-Worn Configuration 1g – Worst cases measurements WWAN+WLAN

EUT Position	Reported SAR 1g (W/Kg)					Sum of WWAN & WLAN
	GSM850	PCS1900	WWAN		WLAN	
			UMTS FDD 2	UMTS FDD 5	Wi-Fi	
Front	0.919				0.065	0.984
Back	1.000				0.109	1.109
Front		0.333			0.065	0.398
Back		0.450			0.109	0.559
Front			0.399		0.065	0.464
Back			0.537		0.109	0.647
Front				0.765	0.065	0.830
Back				0.847	0.109	0.957

Note(s):

1. The sum of reported SAR for WWAN and WLAN exceeds 1.6W/kg in one of the above cases and hence, the SAR to peak location separation ratio distance was calculated as shown in section 7.5.
2. The highest of 1-g reported SAR value between 2.4 GHz and 5.0 GHz is chosen to determine WWAN+ WLAN worst case measurements.

Simultaneous Transmission SAR Analysis (continued)

Hotspot Mode Configuration 1g – Worst cases measurements WWAN+WPAN

EUT Position	Reported SAR 1g (W/Kg)					Sum of WWAN & WPAN
	WWAN				WPAN	
	GSM850	PCS1900	UMTS FDD 2	UMTS FDD 5	Bluetooth	
Front	1.222				0.184	1.406
Back	1.469				0.184	1.653
Left Hand Side	0.901				0.184	1.085
Right Hand Side	0.934					0.934
Bottom	0.256					0.256
Top					0.184	0.184
Front		0.808			0.184	0.992
Back		1.038			0.184	1.222
Left Hand Side		0.104			0.184	0.288
Right Hand Side		0.119				0.119
Bottom		1.175				1.175
Top					0.184	0.184
Front			0.767		0.184	0.951
Back			0.914		0.184	1.098
Left Hand Side			0.105		0.184	0.289
Right Hand Side			0.115			0.115
Bottom			1.081			1.081
Top					0.184	0.184
Front				0.896	0.184	1.080
Back				1.072	0.184	1.256
Left Hand Side				0.696	0.184	0.880
Right Hand Side				0.796		0.796
Bottom				0.206		0.206
Top					0.184	0.184

Simultaneous Transmission SAR Analysis (Continued)
Body-Worn Configuration 1g – Worst cases measurements WWAN+WPAN

EUT Position	Reported SAR 1g (W/Kg)					Sum of WWAN & WPAN
	GSM850	PCS1900	UMTS FDD 2	UMTS FDD 5	Bluetooth	
Front	0.919				0.123	1.042
Back	1.000				0.123	1.123
Front		0.333			0.123	0.456
Back		0.450			0.123	0.573
Front			0.399		0.123	0.522
Back			0.537		0.123	0.660
Front				0.765	0.123	0.888
Back				0.847	0.123	0.970

Note(s):

- As per FCC KDB publication 447498 D01, for cases where sum of WWAN and WLAN (or WPAN) exceed 1.6W/kg, the SAR to peak location separation ratio distance is calculated as shown below
 - SAR peak location separation ratio (SPLSR) for each antenna pair in each simultaneous transmission configuration is given by $(SAR_1 + SAR_2)^{1.5} / R_i \leq 0.04$ for 1-g, where R_i is the separation distance between peak SAR locations for the antenna pair in mm.
 - One case that was found to exceed 1.6W/kg when summed up. These instances are of WWAN and Bluetooth, KDB 447498 states, when SAR is estimated for both antennas, the peak location separation should be determined by the closest physical separation of the antennas, according to the feed-point or geometric center of the antennas, whichever is more conservative. The coordinates of the peaks, whether measured or translated, should be clearly identified in the SAR report.
 - The separation distance between the feed points of WWAN and BT antenna as provided by the customer is 111.96mm. Since, the end to end separation distance between WWAN and BT antenna was more conservative (101.75mm); this was used for the SPLSR calculations.

Applying the formula to (1) we get, $SPLSR = (1.469+0.184)^{1.5} / 101.75 = < 0.021$

Hence, Simultaneous transmission is not required.

- The sum of reported SAR for WWAN and WLAN does exceed 1.6W/kg in one of the above cases and hence, the SAR to peak location separation ratio distance was calculated in 7.5.
- Bluetooth estimated SAR result is calculated as per the formula below following FCC KDB publication 447498.
- Separation distance of 10mm was used for hotspot mode and 15mm for body-worn configuration.

When standalone SAR test exclusion applies to an antenna that transmits simultaneously with other antennas, the standalone SAR must be estimated according to following to determine simultaneous transmission SAR test exclusion:

- $(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm}) \cdot [\sqrt{f_{\text{GHz}}/x}] \text{ W/kg for test separation distances } \leq 50 \text{ mm;}$
 where $x = 7.5$ for 1-g SAR, and $x = 18.75$ for 10-g SAR.

- 10mm Bluetooth estimated SAR level:**

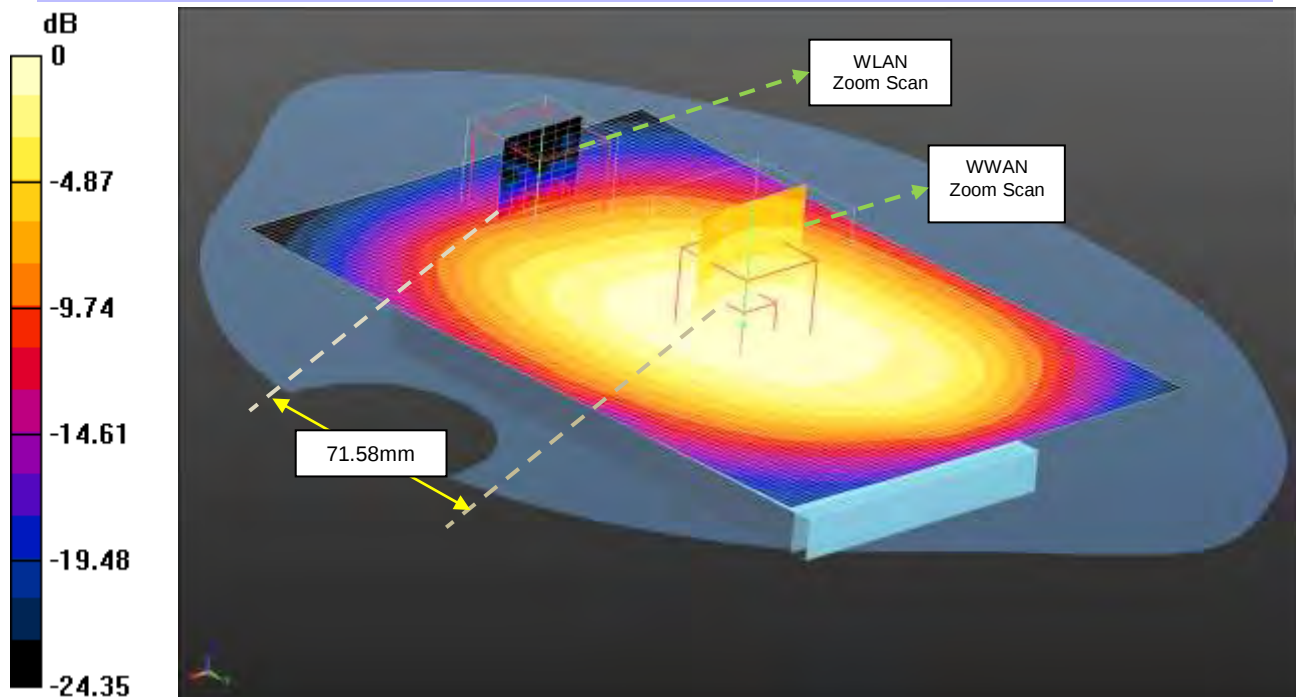
Estimated **Bluetooth** SAR = $(8.91\text{Mw}/10\text{mm}) \cdot (\sqrt{2.4 / 7.5}) = 0.184 \text{ W/kg}$

- 15mm Bluetooth estimated SAR level:**

Estimated **Bluetooth** SAR = $(8.91\text{Mw}/15\text{mm}) \cdot (\sqrt{2.4 / 7.5}) = 0.123 \text{ W/kg}$

7.5. SAR to peak location separation ratio distance (SPLSR) plots calculations

Back GRPS850 CH128 + Back WLAN 802.11a 6Mbps CH48 SPLSR



0 dB = 1.30 W/kg = 1.14 dBW/kg

SPLSR Calculation:

WWAN (GPRS850 CH128) Peak Co-ordinates			WLAN (802.11a CH48) Peak Co-ordinates		
X ₁	Y ₁	Z ₁	X ₂	Y ₂	Z ₂
(m)	(m)	(m)	(m)	(m)	(m)
-0.0185	0.00748	-0.205	-0.0209	-0.064	-0.202

x=(X ₂ - X ₁) ²	y=(Y ₂ - Y ₁) ²	z=(Z ₂ - Z ₁) ²	Square Root of Sum of x, y, z (mm), R _i
0.0000	0.0051	0.0000	71.58

SPLSR =	$(SAR1 + SAR2)^{1.5} / R_i$
	$(1.469+0.187)^{1.5} / 71.58 = 0.03 < 0.04$
	As per KDB 447498 D01, Simultaneous Transmission not Required.

8. Measurement Uncertainty

No measurement or test can ever be perfect and the imperfections give rise to error of measurement in the results. Consequently, the result of a measurement is only an approximation to the value of the measurand (the specific quantity subject to measurement) and is only complete when accompanied by a statement of the uncertainty of the approximation.

The expression of uncertainty of a measurement result allows realistic comparison of results with reference values and limits given in specifications and standards.

The uncertainty of the result may need to be taken into account when interpreting the measurement results.

The reported expanded uncertainties below are based on a standard uncertainty multiplied by an appropriate coverage factor, such that a confidence level of approximately 95% is maintained. For the purposes of this document “approximately” is interpreted as meaning “effectively” or “for most practical purposes”.

Test Name	Confidence Level	Calculated Uncertainty
Specific Absorption Rate-GSM 850/ UMTS FDD 5 Head Configuration 1g	95%	±19.94%
Specific Absorption Rate-GSM / GPRS / EDGE 850 / UMTS FDD 5 Body Configurations 1g	95%	±20.07%
Specific Absorption Rate-PCS 1900 / UMTS FDD 2 Head Configuration 1g	95%	±20.72%
Specific Absorption Rate-GSM / GPRS / EDGE 1900 / UMTS FDD 2 Body Configuration 1g	95%	±20.00%
Specific Absorption Rate-Wi-Fi 2450 MHz Head Configuration 1g	95%	±19.47%
Specific Absorption Rate-Wi-Fi 2450 MHz Body Configuration 1g	95%	±19.90%
Specific Absorption Rate-Wi-Fi 5GHz Head Configuration 1g	95%	±20.14%
Specific Absorption Rate-Wi-Fi 5GHz Body Configuration 1g	95%	±20.14%

The methods used to calculate the above uncertainties are in line with those recommended within the various measurement specifications. Where measurement specifications do not include guidelines for the evaluation of measurement uncertainty, the published guidance of the appropriate accreditation body is followed.

8.1. Specific Absorption Rate Uncertainty –GSM 850 / UMTS FDD 5 Head Configuration 1g

Type	Source of uncertainty	+ Value	- Value	Probability Distribution	Divisor	C _i (1g)	Standard Uncertainty		U _i or U _{eff}
							+ u (%)	- u (%)	
B	Probe calibration	6.000	6.000	normal (k=1)	1.0000	1.0000	6.000	6.000	∞
B	Axial Isotropy	0.250	0.250	normal (k=1)	1.0000	1.0000	0.250	0.250	∞
B	Hemispherical Isotropy	1.300	1.300	normal (k=1)	1.0000	1.0000	1.300	1.300	∞
B	Spatial Resolution	0.500	0.500	Rectangular	1.7321	1.0000	0.289	0.289	∞
B	Boundary Effect	0.769	0.769	Rectangular	1.7321	1.0000	0.444	0.444	∞
B	Linearity	0.600	0.600	Rectangular	1.7321	1.0000	0.346	0.346	∞
B	Detection Limits	0.200	0.200	Rectangular	1.7321	1.0000	0.115	0.115	∞
B	Readout Electronics	0.160	0.160	normal (k=1)	1.0000	1.0000	0.160	0.160	∞
B	Response Time	0.000	0.000	Rectangular	1.7321	1.0000	0.000	0.000	∞
B	Integration Time	1.730	1.730	Rectangular	1.7321	1.0000	0.999	0.999	∞
B	RF Ambient conditions	3.000	3.000	Rectangular	1.7321	1.0000	1.732	1.732	∞
B	Probe Positioner Mechanical Restrictions	4.000	4.000	Rectangular	1.7321	1.0000	2.309	2.309	∞
B	Probe Positioning with regard to Phantom Shell	2.850	2.850	Rectangular	1.7321	1.0000	1.645	1.645	∞
B	Extrapolation and integration / Maximum SAR evaluation	5.080	5.080	Rectangular	1.7321	1.0000	2.933	2.933	∞
A	Test Sample Positioning	2.400	2.400	normal (k=1)	1.0000	1.0000	2.400	2.400	10
A	Device Holder uncertainty	0.154	0.154	normal (k=1)	1.0000	1.0000	0.154	0.154	10
B	Phantom Uncertainty	4.000	4.000	Rectangular	1.7321	1.0000	2.309	2.309	∞
B	Drift of output power	5.000	5.000	Rectangular	1.7321	1.0000	2.887	2.887	∞
B	Liquid Conductivity (target value)	5.000	5.000	Rectangular	1.7321	0.6400	1.848	1.848	∞
A	Liquid Conductivity (measured value)	4.920	4.920	normal (k=1)	1.0000	0.6400	3.149	3.149	5
B	Liquid Permittivity (target value)	5.000	5.000	Rectangular	1.7321	0.6000	1.732	1.732	∞
A	Liquid Permittivity (measured value)	4.970	4.970	normal (k=1)	1.0000	0.6000	2.982	2.982	5
	Combined standard uncertainty			t-distribution			10.17	10.17	>250
	Expanded uncertainty			k = 1.96			19.94	19.94	>250

8.2. Specific Absorption Rate-GSM / GPRS / EDGE 850 / UMTS FDD 5 Body Configuration 1g

Type	Source of uncertainty	+ Value	- Value	Probability Distribution	Divisor	C _i (1g)	Standard Uncertainty		v _i or v _{eff}
							+ u (%)	- u (%)	
B	Probe calibration	6.000	6.000	normal (k=1)	1.0000	1.0000	6.000	6.000	∞
B	Axial Isotropy	0.250	0.250	normal (k=1)	1.0000	1.0000	0.250	0.250	∞
B	Hemispherical Isotropy	1.300	1.300	normal (k=1)	1.0000	1.0000	1.300	1.300	∞
B	Spatial Resolution	0.500	0.500	Rectangular	1.7321	1.0000	0.289	0.289	∞
B	Boundary Effect	0.769	0.769	Rectangular	1.7321	1.0000	0.444	0.444	∞
B	Linearity	0.600	0.600	Rectangular	1.7321	1.0000	0.346	0.346	∞
B	Detection Limits	0.200	0.200	Rectangular	1.7321	1.0000	0.115	0.115	∞
B	Readout Electronics	0.160	0.160	normal (k=1)	1.0000	1.0000	0.160	0.160	∞
B	Response Time	0.000	0.000	Rectangular	1.7321	1.0000	0.000	0.000	∞
B	Integration Time	1.730	1.730	Rectangular	1.7321	1.0000	0.999	0.999	∞
B	RF Ambient conditions	3.000	3.000	Rectangular	1.7321	1.0000	1.732	1.732	∞
B	Probe Positioner Mechanical Restrictions	4.000	4.000	Rectangular	1.7321	1.0000	2.309	2.309	∞
B	Probe Positioning with regard to Phantom Shell	2.850	2.850	Rectangular	1.7321	1.0000	1.645	1.645	∞
B	Extrapolation and integration /Maximum SAR evaluation	5.080	5.080	Rectangular	1.7321	1.0000	2.933	2.933	∞
A	Test Sample Positioning	2.900	2.900	normal (k=1)	1.0000	1.0000	2.900	2.900	10
A	Device Holder uncertainty	0.154	0.154	normal (k=1)	1.0000	1.0000	0.154	0.154	10
B	Phantom Uncertainty	4.000	4.000	Rectangular	1.7321	1.0000	2.309	2.309	∞
B	Drift of output power	5.000	5.000	Rectangular	1.7321	1.0000	2.887	2.887	∞
B	Liquid Conductivity (target value)	5.000	5.000	Rectangular	1.7321	0.6400	1.848	1.848	∞
A	Liquid Conductivity (measured value)	4.690	4.690	normal (k=1)	1.0000	0.6400	3.002	3.002	5
B	Liquid Permittivity (target value)	5.000	5.000	Rectangular	1.7321	0.6000	1.732	1.732	∞
A	Liquid Permittivity (measured value)	4.860	4.860	normal (k=1)	1.0000	0.6000	2.916	2.916	5
	Combined standard uncertainty			t-distribution			10.24	10.24	>250
	Expanded uncertainty			k = 1.96			20.07	20.07	>250

8.3. Specific Absorption Rate-PCS 1900 / UMTS FDD 2 Head Configuration 1g

Type	Source of uncertainty	+ Value	- Value	Probability Distribution	Divisor	C _i (1g)	Standard Uncertainty		v _i or v _{eff}
							+ u (%)	- u (%)	
B	Probe calibration	6.000	6.000	normal (k=1)	1.0000	1.0000	6.000	6.000	∞
B	Axial Isotropy	0.250	0.250	normal (k=1)	1.0000	1.0000	0.250	0.250	∞
B	Hemispherical Isotropy	1.300	1.300	normal (k=1)	1.0000	1.0000	1.300	1.300	∞
B	Spatial Resolution	0.500	0.500	Rectangular	1.7321	1.0000	0.289	0.289	∞
B	Boundary Effect	0.769	0.769	Rectangular	1.7321	1.0000	0.444	0.444	∞
B	Linearity	0.600	0.600	Rectangular	1.7321	1.0000	0.346	0.346	∞
B	Detection Limits	0.200	0.200	Rectangular	1.7321	1.0000	0.115	0.115	∞
B	Readout Electronics	0.160	0.160	normal (k=1)	1.0000	1.0000	0.160	0.160	∞
B	Response Time	0.000	0.000	Rectangular	1.7321	1.0000	0.000	0.000	∞
B	Integration Time	1.730	1.730	Rectangular	1.7321	1.0000	0.999	0.999	∞
B	RF Ambient conditions	3.000	3.000	Rectangular	1.7321	1.0000	1.732	1.732	∞
B	Probe Positioner Mechanical Restrictions	4.000	4.000	Rectangular	1.7321	1.0000	2.309	2.309	∞
B	Probe Positioning with Regard to Phantom Shell	2.850	2.850	Rectangular	1.7321	1.0000	1.645	1.645	∞
B	Extrapolation and integration / Maximum SAR evaluation	5.080	5.080	Rectangular	1.7321	1.0000	2.933	2.933	∞
A	Test Sample Positioning	3.800	3.800	normal (k=1)	1.0000	1.0000	3.800	3.800	10
A	Device Holder uncertainty	0.154	0.154	normal (k=1)	1.0000	1.0000	0.154	0.154	10
B	Phantom Uncertainty	4.000	4.000	Rectangular	1.7321	1.0000	2.309	2.309	∞
B	Drift of output power	5.000	5.000	Rectangular	1.7321	1.0000	2.887	2.887	∞
B	Liquid Conductivity (target value)	5.000	5.000	Rectangular	1.7321	0.6400	1.848	1.848	∞
A	Liquid Conductivity (measured value)	4.900	4.900	normal (k=1)	1.0000	0.6400	3.136	3.136	5
B	Liquid Permittivity (target value)	5.000	5.000	Rectangular	1.7321	0.6000	1.732	1.732	∞
A	Liquid Permittivity (measured value)	4.880	4.880	normal (k=1)	1.0000	0.6000	2.928	2.928	5
	Combined standard uncertainty			t-distribution			10.57	10.57	>200
	Expanded uncertainty			k = 1.96			20.72	20.72	>200

8.4. Specific Absorption Rate-PCS / GPRS / EDGE 1900 / UMTS FDD 2 Body Configuration 1g

Type	Source of uncertainty	+ Value	- Value	Probability Distribution	Divisor	C _i (1g)	Standard Uncertainty		v _i or v _{eff}
							+ u (%)	- u (%)	
B	Probe calibration	6.000	6.000	normal (k=1)	1.0000	1.0000	6.000	6.000	∞
B	Axial Isotropy	0.250	0.250	normal (k=1)	1.0000	1.0000	0.250	0.250	∞
B	Hemispherical Isotropy	1.300	1.300	normal (k=1)	1.0000	1.0000	1.300	1.300	∞
B	Spatial Resolution	0.500	0.500	Rectangular	1.7321	1.0000	0.289	0.289	∞
B	Boundary Effect	0.769	0.769	Rectangular	1.7321	1.0000	0.444	0.444	∞
B	Linearity	0.600	0.600	Rectangular	1.7321	1.0000	0.346	0.346	∞
B	Detection Limits	0.200	0.200	Rectangular	1.7321	1.0000	0.115	0.115	∞
B	Readout Electronics	0.160	0.160	normal (k=1)	1.0000	1.0000	0.160	0.160	∞
B	Response Time	0.000	0.000	Rectangular	1.7321	1.0000	0.000	0.000	∞
B	Integration Time	1.730	1.730	Rectangular	1.7321	1.0000	0.999	0.999	∞
B	RF Ambient conditions	3.000	3.000	Rectangular	1.7321	1.0000	1.732	1.732	∞
B	Probe Positioner Mechanical Restrictions	4.000	4.000	Rectangular	1.7321	1.0000	2.309	2.309	∞
B	Probe Positioning with regard to Phantom Shell	2.850	2.850	Rectangular	1.7321	1.0000	1.645	1.645	∞
B	Extrapolation and integration / Maximum SAR evaluation	5.080	5.080	Rectangular	1.7321	1.0000	2.933	2.933	∞
A	Test Sample Positioning	2.500	2.500	normal (k=1)	1.0000	1.0000	2.500	2.500	10
A	Device Holder uncertainty	0.154	0.154	normal (k=1)	1.0000	1.0000	0.154	0.154	10
B	Phantom Uncertainty	4.000	4.000	Rectangular	1.7321	1.0000	2.309	2.309	∞
B	Drift of output power	5.000	5.000	Rectangular	1.7321	1.0000	2.887	2.887	∞
B	Liquid Conductivity (target value)	5.000	5.000	Rectangular	1.7321	0.6400	1.848	1.848	∞
A	Liquid Conductivity (measured value)	4.940	4.940	normal (k=1)	1.0000	0.6400	3.162	3.162	5
B	Liquid Permittivity (target value)	5.000	5.000	Rectangular	1.7321	0.6000	1.732	1.732	∞
A	Liquid Permittivity (measured value)	4.980	4.980	normal (k=1)	1.0000	0.6000	2.988	2.988	5
	Combined standard uncertainty			t-distribution			10.20	10.20	>250
	Expanded uncertainty			k = 1.96			20.00	20.00	>250

8.5. Specific Absorption Rate-Wi-Fi 2450 MHz Head Configuration 1g

Type	Source of uncertainty	+ Value	- Value	Probability Distribution	Divisor	C _i (1g)	Standard Uncertainty		U _i or U _{eff}
							+ u (%)	- u (%)	
B	Probe calibration	6.000	6.000	normal (k=1)	1.0000	1.0000	6.000	6.000	∞
B	Axial Isotropy	0.250	0.250	normal (k=1)	1.0000	1.0000	0.250	0.250	∞
B	Hemispherical Isotropy	1.300	1.300	normal (k=1)	1.0000	1.0000	1.300	1.300	∞
B	Spatial Resolution	0.500	0.500	Rectangular	1.7321	1.0000	0.289	0.289	∞
B	Boundary Effect	0.769	0.769	Rectangular	1.7321	1.0000	0.444	0.444	∞
B	Linearity	0.600	0.600	Rectangular	1.7321	1.0000	0.346	0.346	∞
B	Detection Limits	0.200	0.200	Rectangular	1.7321	1.0000	0.115	0.115	∞
B	Readout Electronics	0.160	0.160	normal (k=1)	1.0000	1.0000	0.160	0.160	∞
B	Response Time	0.000	0.000	Rectangular	1.7321	1.0000	0.000	0.000	∞
B	Integration Time	0.000	0.000	Rectangular	1.7321	1.0000	0.000	0.000	∞
B	RF Ambient conditions	3.000	3.000	Rectangular	1.7321	1.0000	1.732	1.732	∞
B	Probe Positioner Mechanical Restrictions	4.000	4.000	Rectangular	1.7321	1.0000	2.309	2.309	∞
B	Probe Positioning with regard to Phantom Shell	2.850	2.850	Rectangular	1.7321	1.0000	1.645	1.645	∞
B	Extrapolation and integration / Maximum SAR evaluation	5.080	5.080	Rectangular	1.7321	1.0000	2.933	2.933	∞
A	Test Sample Positioning	2.000	2.000	normal (k=1)	1.0000	1.0000	2.000	2.000	10
A	Device Holder uncertainty	0.154	0.154	normal (k=1)	1.0000	1.0000	0.154	0.154	10
B	Phantom Uncertainty	4.000	4.000	Rectangular	1.7321	1.0000	2.309	2.309	∞
B	Drift of output power	5.000	5.000	Rectangular	1.7321	1.0000	2.887	2.887	∞
B	Liquid Conductivity (target value)	5.000	5.000	Rectangular	1.7321	0.6400	1.848	1.848	∞
A	Liquid Conductivity (measured value)	4.410	4.410	normal (k=1)	1.0000	0.6400	2.822	2.822	5
B	Liquid Permittivity (target value)	5.000	5.000	Rectangular	1.7321	0.6000	1.732	1.732	∞
A	Liquid Permittivity (measured value)	4.930	4.930	normal (k=1)	1.0000	0.6000	2.958	2.958	5
	Combined standard uncertainty			t-distribution			9.93	9.93	>300
	Expanded uncertainty			k = 1.96			19.47	19.47	>300

8.6. Specific Absorption Rate-Wi-Fi 2450 MHz Body Configuration 1g

Type	Source of uncertainty	+ Value	- Value	Probability Distribution	Divisor	C _i (1g)	Standard Uncertainty		v _i or v _{eff}
							+ u (%)	- u (%)	
B	Probe calibration	6.000	6.000	normal (k=1)	1.0000	1.0000	6.000	6.000	∞
B	Axial Isotropy	0.250	0.250	normal (k=1)	1.0000	1.0000	0.250	0.250	∞
B	Hemispherical Isotropy	1.300	1.300	normal (k=1)	1.0000	1.0000	1.300	1.300	∞
B	Spatial Resolution	0.500	0.500	Rectangular	1.7321	1.0000	0.289	0.289	∞
B	Boundary Effect	0.769	0.769	Rectangular	1.7321	1.0000	0.444	0.444	∞
B	Linearity	0.600	0.600	Rectangular	1.7321	1.0000	0.346	0.346	∞
B	Detection Limits	0.200	0.200	Rectangular	1.7321	1.0000	0.115	0.115	∞
B	Readout Electronics	0.160	0.160	normal (k=1)	1.0000	1.0000	0.160	0.160	∞
B	Response Time	0.000	0.000	Rectangular	1.7321	1.0000	0.000	0.000	∞
B	Integration Time	0.000	0.000	Rectangular	1.7321	1.0000	0.000	0.000	∞
B	RF Ambient conditions	3.000	3.000	Rectangular	1.7321	1.0000	1.732	1.732	∞
B	Probe Positioner Mechanical Restrictions	4.000	4.000	Rectangular	1.7321	1.0000	2.309	2.309	∞
B	Probe Positioning with regard to Phantom Shell	2.850	2.850	Rectangular	1.7321	1.0000	1.645	1.645	∞
B	Extrapolation and integration / Maximum SAR evaluation	5.080	5.080	Rectangular	1.7321	1.0000	2.933	2.933	∞
A	Test Sample Positioning	2.570	2.570	normal (k=1)	1.0000	1.0000	2.570	2.570	10
A	Device Holder uncertainty	0.154	0.154	normal (k=1)	1.0000	1.0000	0.154	0.154	10
B	Phantom Uncertainty	4.000	4.000	Rectangular	1.7321	1.0000	2.309	2.309	∞
B	Drift of output power	5.000	5.000	Rectangular	1.7321	1.0000	2.887	2.887	∞
B	Liquid Conductivity (target value)	5.000	5.000	Rectangular	1.7321	0.6400	1.848	1.848	∞
A	Liquid Conductivity (measured value)	4.900	4.900	normal (k=1)	1.0000	0.6400	3.136	3.136	5
B	Liquid Permittivity (target value)	5.000	5.000	Rectangular	1.7321	0.6000	1.732	1.732	∞
A	Liquid Permittivity (measured value)	4.920	4.920	normal (k=1)	1.0000	0.6000	2.952	2.952	5
	Combined standard uncertainty			t-distribution			10.15	10.15	>250
	Expanded uncertainty			k = 1.96			19.90	19.90	>250

8.7. Specific Absorption Rate-Wi-Fi 5GHz Head Configuration 1g

Type	Source of uncertainty	+ Value	- Value	Probability Distribution	Divisor	C _i (1g)	Standard Uncertainty		U _i or U _{eff}
							+ u (%)	- u (%)	
B	Probe calibration	6.550	6.550	normal (k=1)	1.0000	1.0000	6.550	6.550	∞
B	Axial Isotropy	0.250	0.250	normal (k=1)	1.0000	1.0000	0.250	0.250	∞
B	Hemispherical Isotropy	1.300	1.300	normal (k=1)	1.0000	1.0000	1.300	1.300	∞
B	Spatial Resolution	0.500	0.500	Rectangular	1.7321	1.0000	0.289	0.289	∞
B	Boundary Effect	0.769	0.769	Rectangular	1.7321	1.0000	0.444	0.444	∞
B	Linearity	0.600	0.600	Rectangular	1.7321	1.0000	0.346	0.346	∞
B	Detection Limits	0.200	0.200	Rectangular	1.7321	1.0000	0.115	0.115	∞
B	Readout Electronics	0.160	0.160	normal (k=1)	1.0000	1.0000	0.160	0.160	∞
B	Response Time	0.000	0.000	Rectangular	1.7321	1.0000	0.000	0.000	∞
B	Integration Time	0.000	0.000	Rectangular	1.7321	1.0000	0.000	0.000	∞
B	RF Ambient conditions	3.000	3.000	Rectangular	1.7321	1.0000	1.732	1.732	∞
B	Probe Positioner Mechanical Restrictions	4.000	4.000	Rectangular	1.7321	1.0000	2.309	2.309	∞
B	Probe Positioning with regard to Phantom Shell	2.850	2.850	Rectangular	1.7321	1.0000	1.645	1.645	∞
B	Extrapolation and integration / Maximum SAR evaluation	5.080	5.080	Rectangular	1.7321	1.0000	2.933	2.933	∞
A	Test Sample Positioning	2.540	2.540	normal (k=1)	1.0000	1.0000	2.540	2.540	10
A	Device Holder uncertainty	0.154	0.154	normal (k=1)	1.0000	1.0000	0.154	0.154	10
B	Phantom Uncertainty	4.000	4.000	Rectangular	1.7321	1.0000	2.309	2.309	∞
B	Drift of output power	5.000	5.000	Rectangular	1.7321	1.0000	2.887	2.887	∞
B	Liquid Conductivity (target value)	5.000	5.000	Rectangular	1.7321	0.6400	1.848	1.848	∞
A	Liquid Conductivity (measured value)	4.690	4.690	normal (k=1)	1.0000	0.6400	3.002	3.002	5
B	Liquid Permittivity (target value)	5.000	5.000	Rectangular	1.7321	0.6000	1.732	1.732	∞
A	Liquid Permittivity (measured value)	3.830	3.830	normal (k=1)	1.0000	0.6000	2.298	2.298	5
	Combined standard uncertainty			t-distribution			10.28	10.28	>400
	Expanded uncertainty			k = 1.96			20.14	20.14	>400

8.8. Specific Absorption Rate-Wi-Fi 5GHz Body Configuration 1g

Type	Source of uncertainty	+ Value	- Value	Probability Distribution	Divisor	C _i (1g)	Standard Uncertainty		v _i or v _{eff}
							+ u (%)	- u (%)	
B	Probe calibration	6.550	6.550	normal (k=1)	1.0000	1.0000	6.550	6.550	∞
B	Axial Isotropy	0.250	0.250	normal (k=1)	1.0000	1.0000	0.250	0.250	∞
B	Hemispherical Isotropy	1.300	1.300	normal (k=1)	1.0000	1.0000	1.300	1.300	∞
B	Spatial Resolution	0.500	0.500	Rectangular	1.7321	1.0000	0.289	0.289	∞
B	Boundary Effect	0.769	0.769	Rectangular	1.7321	1.0000	0.444	0.444	∞
B	Linearity	0.600	0.600	Rectangular	1.7321	1.0000	0.346	0.346	∞
B	Detection Limits	0.200	0.200	Rectangular	1.7321	1.0000	0.115	0.115	∞
B	Readout Electronics	0.160	0.160	normal (k=1)	1.0000	1.0000	0.160	0.160	∞
B	Response Time	0.000	0.000	Rectangular	1.7321	1.0000	0.000	0.000	∞
B	Integration Time	0.000	0.000	Rectangular	1.7321	1.0000	0.000	0.000	∞
B	RF Ambient conditions	3.000	3.000	Rectangular	1.7321	1.0000	1.732	1.732	∞
B	Probe Positioner Mechanical Restrictions	4.000	4.000	Rectangular	1.7321	1.0000	2.309	2.309	∞
B	Probe Positioning with regard to Phantom Shell	2.850	2.850	Rectangular	1.7321	1.0000	1.645	1.645	∞
B	Extrapolation and integration / Maximum SAR evaluation	5.080	5.080	Rectangular	1.7321	1.0000	2.933	2.933	∞
A	Test Sample Positioning	2.540	2.540	normal (k=1)	1.0000	1.0000	2.540	2.540	10
A	Device Holder uncertainty	0.154	0.154	normal (k=1)	1.0000	1.0000	0.154	0.154	10
B	Phantom Uncertainty	4.000	4.000	Rectangular	1.7321	1.0000	2.309	2.309	∞
B	Drift of output power	5.000	5.000	Rectangular	1.7321	1.0000	2.887	2.887	∞
B	Liquid Conductivity (target value)	5.000	5.000	Rectangular	1.7321	0.6400	1.848	1.848	∞
A	Liquid Conductivity (measured value)	4.690	4.690	normal (k=1)	1.0000	0.6400	3.002	3.002	5
B	Liquid Permittivity (target value)	5.000	5.000	Rectangular	1.7321	0.6000	1.732	1.732	∞
A	Liquid Permittivity (measured value)	3.830	3.830	normal (k=1)	1.0000	0.6000	2.298	2.298	5
	Combined standard uncertainty			t-distribution			10.28	10.28	>400
	Expanded uncertainty			k = 1.96			20.14	20.14	>400

Appendix 1. Test Equipment Used

UL No.	Instrument	Manufacturer	Type No.	Serial No.	Date Last Calibrated	Cal. Interval (Months)
A034	Narda 20W Termination	Narda	374BNM	8706	Calibrated as part of system	-
A1097	SMA Directional Coupler	MiDISCO	MDC6223-30	None	Calibrated as part of system	-
A1137	3Db Attenuator	Narda	779	04690	Calibrated as part of system	-
A1328	Handset Positioner	Schmid & Partner Engineering AG	Modification	SD 000 H01 DA	-	-
A1182	Handset Positioner	Schmid & Partner Engineering AG	V3.0	None	-	-
A2111	Data Acquisition Electronics	Schmid & Partner Engineering AG	DAE3	432	02 May 2012	12
A2110	Data Acquisition Electronics	Schmid & Partner Engineering AG	DAE3	431	20 Sept 2012	12
A1234	Data Acquisition Electronics	Schmid & Partner Engineering AG	DAE3	450	22 Jan 2013	12
A2077	Probe	Schmid & Partner Engineering AG	EX3 DV4	3814	24 Sep 2012	12
A2113	Probe	Schmid & Partner Engineering AG	ET3 DV6	1587	11 May 2012	12
A1185	Probe	Schmid & Partner Engineering AG	ET3 DV6	1528	26 Jul 2012	12
A2201	900 MHz Dipole Kit	Schmid & Partner Engineering AG	D900V2	035	16 Aug 2012	12
A2200	1900 MHz Dipole Kit	Schmid & Partner Engineering AG	D1900V2	537	14 Aug 2012	12
A2202	2440 MHz Dipole Kit	Schmid & Partner Engineering AG	D2440V2	701	13 Aug 2012	12
A1377	5.0 GHz Dipole Kit	Schmid & Partner Engineering AG	D5GHzV2	1016	20 Feb 2013	12
A1497	Amplifier	Mini-Circuits	zh1-42w (sma)	e020105	Calibrated as part of system	-
A1566	SAM Phantom	Schmid & Partner Engineering AG	SAM a (Site 56)	002	Calibrated before use	-
A1238	SAM Phantom	Schmid & Partner Engineering AG	SAM b (Site 56)	001	Calibrated before use	-
A2125	SAM Phantom	Schmid & Partner Engineering AG	SAM b (Site 57)	TP-1031	Calibrated before use	-

UL No.	Instrument	Manufacturer	Type No.	Serial No.	Date Last Calibrated	Cal. Interval (Months)
A2124	SAM Phantom	Schmid & Partner Engineering AG	SAM a (Site 57)	TP-1030	Calibrated before use	-
A215	20 Db Attenuator	Narda	766-20	9402	Calibrated as part of system	-
A1531	Antenna	AARONIA AG	7025	02458	-	-
FA2263	Digital Camera	Samsung	PL211	9453C90B 607487L	-	-
M1015	Network Analyser	Agilent Technologies	8753ES	US39172406	09 Oct 2012	12
C1145	Cable	Rosenberger MICRO-COAX	FA147A F003003030	41843-1	Calibrated as part of system	-
C1146	Cable	Rosenberger MICRO-COAX	FA147A F030003030	41752-1	Calibrated as part of system	-
G0528	Robot Power Supply	Schmid & Partner Engineering AG	DASY4	None	Calibrated before use	-
GO591	Robot Power Supply	Schmid & Partner Engineering AG	DASY4	None	Calibrated before use	-
G0592	Robot Power Supply	Schmid & Partner Engineering AG	DASY53	None	Calibrated before use	-
G087	PSU	Thurlby Thandar	CPX200	100701	Calibrated before use	-
M1047	Robot Arm	Staubli	RX908 L	F00/SD8 9A1/A/01	Calibrated before use	-
M1653	Robot Arm	Staubli	RX908 L	F01/5J8 6A1/C/01	Calibrated before use	-
M1680	Robot Arm	Staubli	TX60 L	F12/5MZ7 A1/A/01	Calibrated before use	-
M1159	Signal Generator	Agilent Technologies	E8241A	US42110332	Internal Checked 10 Dec 2012	4
M1647	Signal Generator	Hewlett Packward	8648C	3537A01598	01 Jun 2012	12
M1071	Spectrum Analyzer	Agilent	HP8590E	3647U00514	(Monitoring use only)	-
M1270	Digital Thermometer	RS	N/A	N/A	Internal Checked 13 May 2012	12
M1023	Dual Channel Power Meter	R & S	NRVD	863715/030	18 July 2012	12
S256	SAR Lab	UL	Site 56	N/A	Calibrated before use	-
S512	SAR Lab	UL	Site 57	N/A	Calibrated before use	-
S513	SAR Lab	UL	Site 58	N/A	Calibrated before use	-

Note:

All the assets were in calibration during the course of testing.

A.1.1. Calibration Certificates

This section contains the calibration certificates and data for the Probe(s) and Dipole(s) used, which are not included in the total number of pages for this report.

Checked by R. Durr DATE: 26-SEPT-2012

**Calibration Laboratory of
Schmid & Partner
Engineering AG**
Zeughausstrasse 43, 8004 Zurich, Switzerland



S Schweizerischer Kalibrierdienst
C Service suisse d'étalonnage
S Servizio svizzero di taratura
Swiss Calibration Service

Accredited by the Swiss Accreditation Service (SAS)

ASSET A2077

Accreditation No.: **SCS 108**

The Swiss Accreditation Service is one of the signatories to the EA
Multilateral Agreement for the recognition of calibration certificates

Client

RFI

Certificate No: **EX3-3814_Sep12**

CALIBRATION CERTIFICATE

Object

EX3DV4 - SN:3814

Calibration procedure(s)

QA CAL-01.v8, QA CAL-14.v3, QA CAL-23.v4, QA CAL-25.v4
Calibration procedure for dosimetric E-field probes

Calibration date:

September 24, 2012

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).
The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature $(22 \pm 3)^\circ\text{C}$ and humidity $< 70\%$.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID	Cal Date (Certificate No.)	Scheduled Calibration
Power meter E4419B	GB41293874	29-Mar-12 (No. 217-01508)	Apr-13
Power sensor E4412A	MY41498087	29-Mar-12 (No. 217-01508)	Apr-13
Reference 3 dB Attenuator	SN: S5054 (3c)	27-Mar-12 (No. 217-01531)	Apr-13
Reference 20 dB Attenuator	SN: S5086 (20b)	27-Mar-12 (No. 217-01529)	Apr-13
Reference 30 dB Attenuator	SN: S5129 (30b)	27-Mar-12 (No. 217-01532)	Apr-13
Reference Probe ES3DV2	SN: 3013	29-Dec-11 (No. ES3-3013_Dec11)	Dec-12
DAE4	SN: 660	20-Jun-12 (No. DAE4-660_Jun12)	Jun-13
Secondary Standards	ID	Check Date (in house)	Scheduled Check
RF generator HP 8648C	US3642U01700	4-Aug-99 (in house check Apr-11)	In house check: Apr-13
Network Analyzer HP 8753E	US37390585	18-Oct-01 (in house check Oct-11)	In house check: Oct-12

Calibrated by:

Name

Jeton Kastrati

Function

Laboratory Technician

Signature

Approved by:

Katja Pokovic

Technical Manager

Issued: September 24, 2012

This calibration certificate shall not be reproduced except in full without written approval of the laboratory.



Accredited by the Swiss Accreditation Service (SAS)

Accreditation No.: **SCS 108**

The Swiss Accreditation Service is one of the signatories to the EA
Multilateral Agreement for the recognition of calibration certificates

Glossary:

TSL	tissue simulating liquid
NORM _{x,y,z}	sensitivity in free space
ConvF	sensitivity in TSL / NORM _{x,y,z}
DCP	diode compression point
CF	crest factor (1/duty_cycle) of the RF signal
A, B, C	modulation dependent linearization parameters
Polarization φ	φ rotation around probe axis
Polarization ϑ	ϑ rotation around an axis that is in the plane normal to probe axis (at measurement center), i.e., $\vartheta = 0$ is normal to probe axis

Calibration is Performed According to the Following Standards:

- IEEE Std 1528-2003, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", December 2003
- IEC 62209-1, "Procedure to measure the Specific Absorption Rate (SAR) for hand-held devices used in close proximity to the ear (frequency range of 300 MHz to 3 GHz)", February 2005

Methods Applied and Interpretation of Parameters:

- NORM_{x,y,z}**: Assessed for E-field polarization $\vartheta = 0$ ($f \leq 900$ MHz in TEM-cell; $f > 1800$ MHz: R22 waveguide). NORM_{x,y,z} are only intermediate values, i.e., the uncertainties of NORM_{x,y,z} does not affect the E²-field uncertainty inside TSL (see below *ConvF*).
- NORM(f)_{x,y,z}** = NORM_{x,y,z} * *frequency_response* (see Frequency Response Chart). This linearization is implemented in DASY4 software versions later than 4.2. The uncertainty of the frequency response is included in the stated uncertainty of *ConvF*.
- DCP_{x,y,z}**: DCP are numerical linearization parameters assessed based on the data of power sweep with CW signal (no uncertainty required). DCP does not depend on frequency nor media.
- PAR**: PAR is the Peak to Average Ratio that is not calibrated but determined based on the signal characteristics
- A_{x,y,z}; B_{x,y,z}; C_{x,y,z}; VR_{x,y,z}**: A, B, C are numerical linearization parameters assessed based on the data of power sweep for specific modulation signal. The parameters do not depend on frequency nor media. VR is the maximum calibration range expressed in RMS voltage across the diode.
- ConvF and Boundary Effect Parameters**: Assessed in flat phantom using E-field (or Temperature Transfer Standard for $f \leq 800$ MHz) and inside waveguide using analytical field distributions based on power measurements for $f > 800$ MHz. The same setups are used for assessment of the parameters applied for boundary compensation (alpha, depth) of which typical uncertainty values are given. These parameters are used in DASY4 software to improve probe accuracy close to the boundary. The sensitivity in TSL corresponds to NORM_{x,y,z} * *ConvF* whereby the uncertainty corresponds to that given for *ConvF*. A frequency dependent *ConvF* is used in DASY version 4.4 and higher which allows extending the validity from ± 50 MHz to ± 100 MHz.
- Spherical isotropy (3D deviation from isotropy)**: in a field of low gradients realized using a flat phantom exposed by a patch antenna.
- Sensor Offset**: The sensor offset corresponds to the offset of virtual measurement center from the probe tip (on probe axis). No tolerance required.

Probe EX3DV4

SN:3814

Manufactured: September 2, 2011
Calibrated: September 24, 2012

Calibrated for DASY/EASY Systems
(Note: non-compatible with DASY2 system!)

DASY/EASY - Parameters of Probe: EX3DV4 - SN:3814

Basic Calibration Parameters

	Sensor X	Sensor Y	Sensor Z	Unc (k=2)
Norm ($\mu\text{V}/(\text{V}/\text{m})^2$) ^A	0.53	0.50	0.44	± 10.1 %
DCP (mV) ^B	99.9	93.7	98.7	

Modulation Calibration Parameters

UID	Communication System Name	PAR		A dB	B dB	C dB	VR mV	Unc ^E (k=2)
0	CW	0.00	X	0.00	0.00	1.00	172.6	±3.0 %
			Y	0.00	0.00	1.00	154.1	
			Z	0.00	0.00	1.00	144.1	

The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor $k=2$, which for a normal distribution corresponds to a coverage probability of approximately 95%.

^A The uncertainties of NormX,Y,Z do not affect the E^2 -field uncertainty inside TSL (see Pages 5 and 6).

^B Numerical linearization parameter: uncertainty not required.

^E Uncertainty is determined using the max. deviation from linear response applying rectangular distribution and is expressed for the square of the field value.

DASY/EASY - Parameters of Probe: EX3DV4 - SN:3814

Calibration Parameter Determined in Head Tissue Simulating Media

f (MHz) ^C	Relative Permittivity ^F	Conductivity (S/m) ^F	ConvF X	ConvF Y	ConvF Z	Alpha	Depth (mm)	Unct. (k=2)
1450	40.5	1.20	8.56	8.56	8.56	0.19	2.04	± 12.0 %
2450	39.2	1.80	6.89	6.89	6.89	0.33	0.97	± 12.0 %
2600	39.0	1.96	6.81	6.81	6.81	0.34	1.00	± 12.0 %
5200	36.0	4.66	5.06	5.06	5.06	0.42	1.80	± 13.1 %
5300	35.9	4.76	4.73	4.73	4.73	0.42	1.80	± 13.1 %
5500	35.6	4.96	4.54	4.54	4.54	0.45	1.80	± 13.1 %
5600	35.5	5.07	4.26	4.26	4.26	0.50	1.80	± 13.1 %
5800	35.3	5.27	4.50	4.50	4.50	0.45	1.80	± 13.1 %

^C Frequency validity of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.

^F At frequencies below 3 GHz, the validity of tissue parameters (ϵ and σ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ϵ and σ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

DASY/EASY - Parameters of Probe: EX3DV4 - SN:3814

Calibration Parameter Determined in Body Tissue Simulating Media

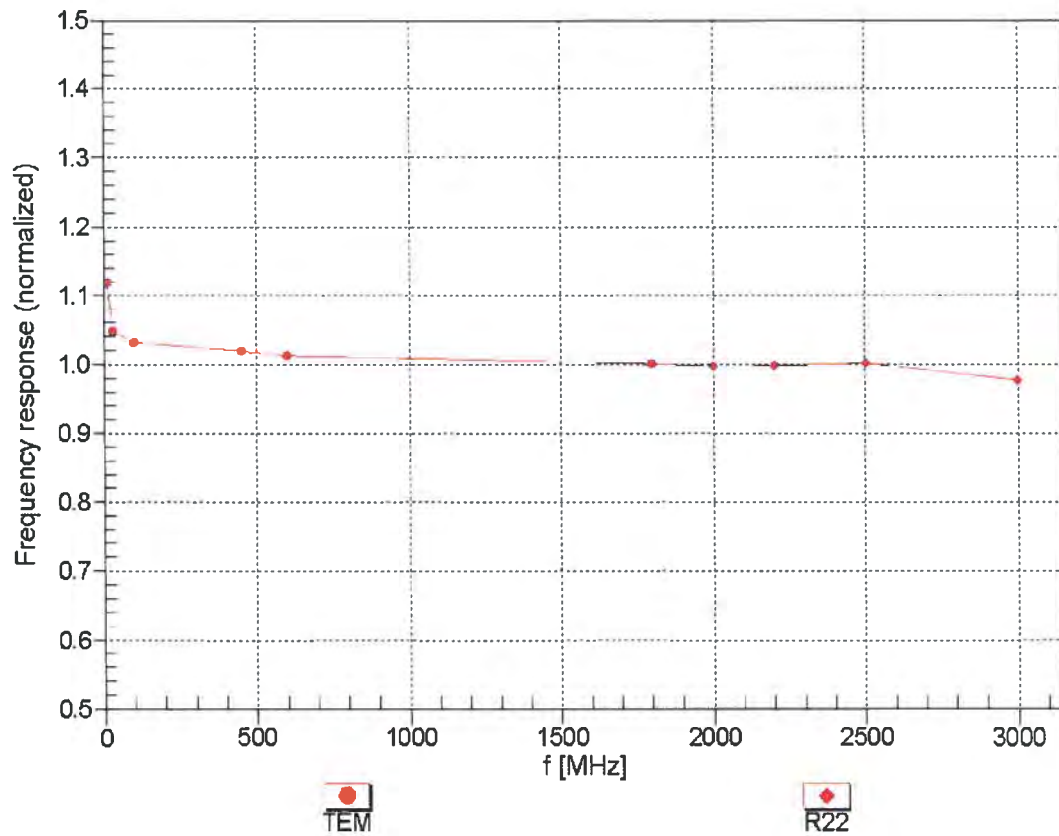
f (MHz) ^C	Relative Permittivity ^F	Conductivity (S/m) ^F	ConvF X	ConvF Y	ConvF Z	Alpha	Depth (mm)	Unct. (k=2)
1450	54.0	1.30	8.26	8.26	8.26	0.23	1.40	± 12.0 %
2450	52.7	1.95	7.41	7.41	7.41	0.80	0.66	± 12.0 %
2600	52.5	2.16	7.08	7.08	7.08	0.79	0.61	± 12.0 %
3700	51.0	3.55	6.27	6.27	6.27	0.22	2.24	± 13.1 %
5200	49.0	5.30	4.39	4.39	4.39	0.52	1.90	± 13.1 %
5300	48.9	5.42	4.11	4.11	4.11	0.55	1.90	± 13.1 %
5500	48.6	5.65	4.02	4.02	4.02	0.52	1.90	± 13.1 %
5600	48.5	5.77	3.71	3.71	3.71	0.60	1.90	± 13.1 %
5800	48.2	6.00	3.97	3.97	3.97	0.60	1.90	± 13.1 %

^C Frequency validity of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.

^F At frequencies below 3 GHz, the validity of tissue parameters (ϵ and σ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ϵ and σ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

Frequency Response of E-Field

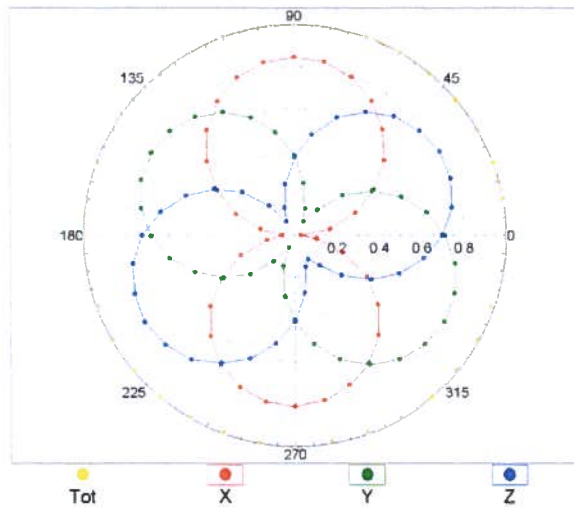
(TEM-Cell:ifi110 EXX, Waveguide: R22)



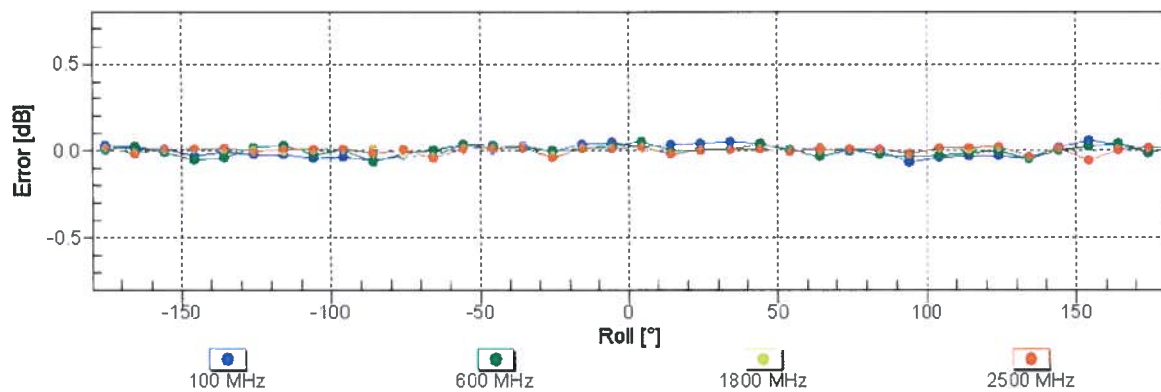
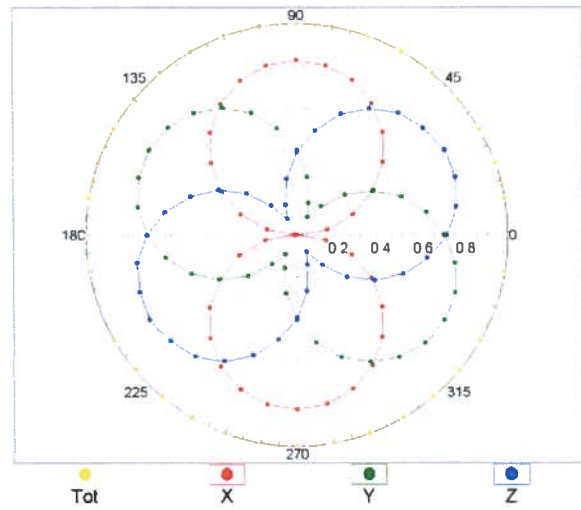
Uncertainty of Frequency Response of E-field: $\pm 6.3\%$ ($k=2$)

Receiving Pattern (ϕ), $\vartheta = 0^\circ$

$f=600$ MHz, TEM

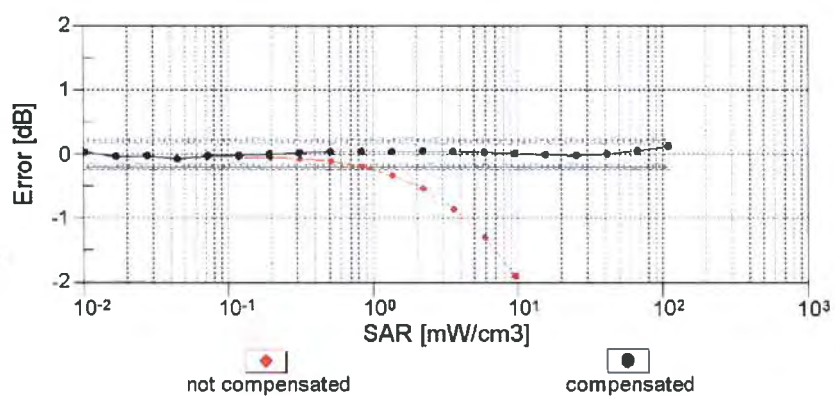
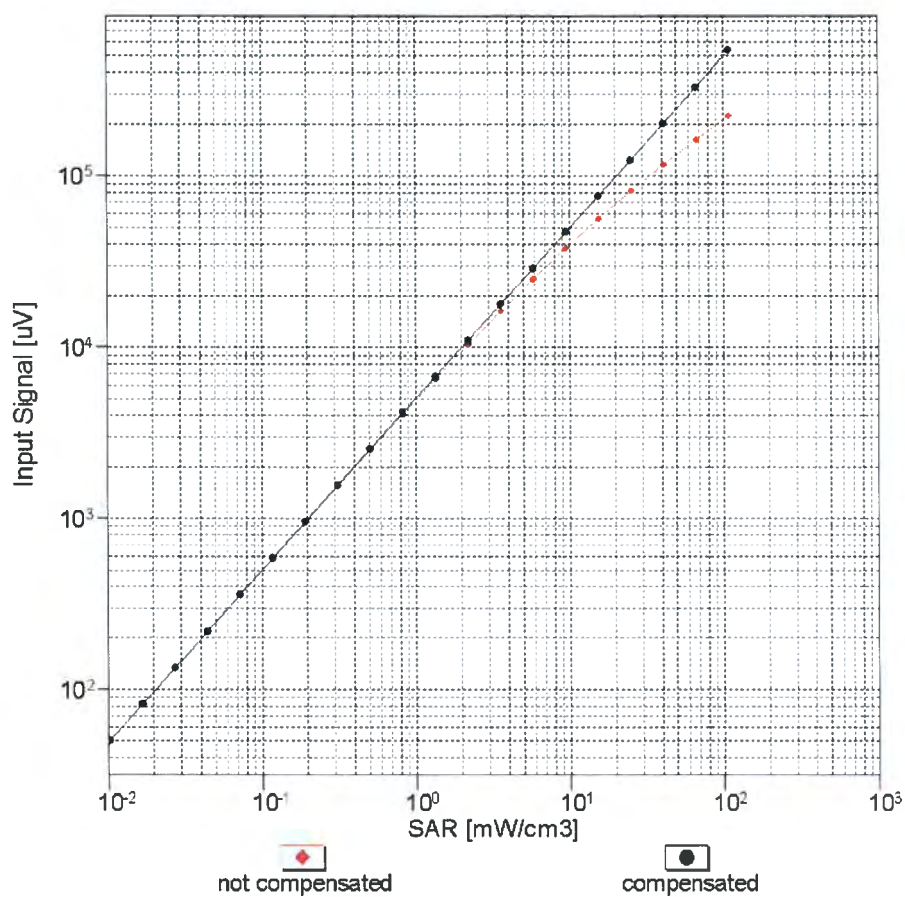


$f=1800$ MHz, R22



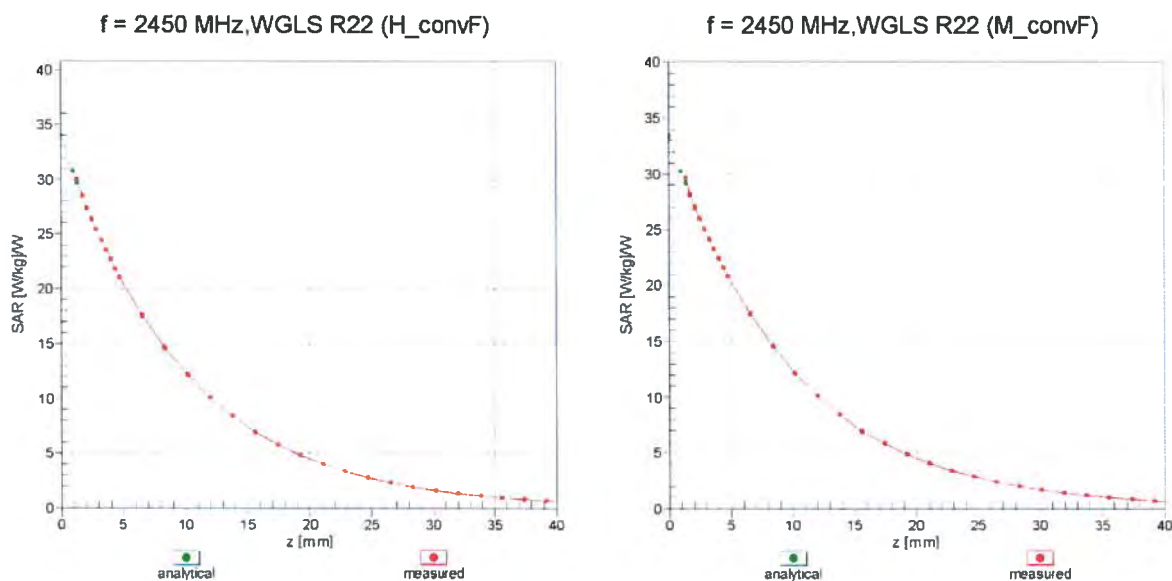
Uncertainty of Axial Isotropy Assessment: $\pm 0.5\%$ ($k=2$)

Dynamic Range $f(\text{SAR}_{\text{head}})$ (TEM cell , $f = 900 \text{ MHz}$)



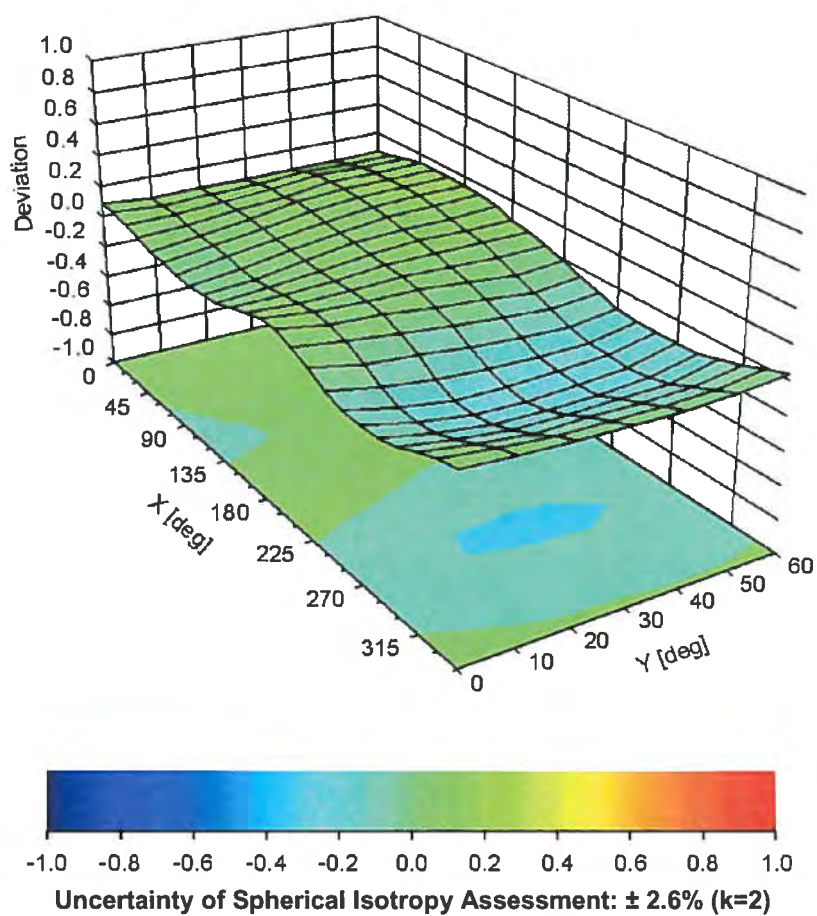
Uncertainty of Linearity Assessment: $\pm 0.6\%$ ($k=2$)

Conversion Factor Assessment



Deviation from Isotropy in Liquid

Error (ϕ, θ), $f = 900 \text{ MHz}$



DASY/EASY - Parameters of Probe: EX3DV4 - SN:3814

Other Probe Parameters

Sensor Arrangement	Triangular
Connector Angle (°)	-65.7
Mechanical Surface Detection Mode	enabled
Optical Surface Detection Mode	disabled
Probe Overall Length	337 mm
Probe Body Diameter	10 mm
Tip Length	9 mm
Tip Diameter	2.5 mm
Probe Tip to Sensor X Calibration Point	1 mm
Probe Tip to Sensor Y Calibration Point	1 mm
Probe Tip to Sensor Z Calibration Point	1 mm
Recommended Measurement Distance from Surface	2 mm

Checked by R.D.

17-May-2012

**Calibration Laboratory of
Schmid & Partner
Engineering AG**
Zeughausstrasse 43, 8004 Zurich, Switzerland



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C
S

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Swiss Calibration Service

Accredited by the Swiss Accreditation Service (SAS)

Accreditation No.: SCS 108

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Multilateral Agreement for the recognition of calibration certificates

ASSET A2113

Client

RFI

Certificate No: ET3-1587_May12

CALIBRATION CERTIFICATE

Object

ET3DV6 - SN:1587

Calibration procedure(s)

QA CAL-01.v8, QA CAL-23.v4, QA CAL-25.v4
Calibration procedure for dosimetric E-field probes

Calibration date

May 11, 2012

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).
The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature $(22 \pm 3)^\circ\text{C}$ and humidity $< 70\%$.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID	Cal Date (Certificate No.)	Scheduled Calibration
Power meter E4419B	GB41293874	29-Mar-12 (No. 217-01508)	Apr-13
Power sensor E4412A	MY41498087	29-Mar-12 (No. 217-01508)	Apr-13
Reference 3 dB Attenuator	SN: S5054 (3c)	27-Mar-12 (No. 217-01531)	Apr-13
Reference 20 dB Attenuator	SN: S5086 (20b)	27-Mar-12 (No. 217-01529)	Apr-13
Reference 30 dB Attenuator	SN: S5129 (30b)	27-Mar-12 (No. 217-01532)	Apr-13
Reference Probe ES3DV2	SN: 3013	29-Dec-11 (No. ES3-3013_Dec11)	Dec-12
DAE4	SN: 660	10-Jan-12 (No. DAE4-660_Jan12)	Jan-13
Secondary Standards	ID	Check Date (in house)	Scheduled Check
RF generator HP 8648C	US3642U01700	4-Aug-99 (in house check Apr-11)	In house check: Apr-13
Network Analyzer HP 8753E	US37390585	18-Oct-01 (in house check Oct-11)	In house check: Oct-12

	Name	Function	Signature
Calibrated by:	Claudio Leubler	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	
Issued: May 11, 2012			
This calibration certificate shall not be reproduced except in full without written approval of the laboratory.			



Accredited by the Swiss Accreditation Service (SAS)

Accreditation No.: **SCS 108**

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Multilateral Agreement for the recognition of calibration certificates

Glossary:

TSL	tissue simulating liquid
NORM _{x,y,z}	sensitivity in free space
ConvF	sensitivity in TSL / NORM _{x,y,z}
DCP	diode compression point
CF	crest factor (1/duty_cycle) of the RF signal
A, B, C	modulation dependent linearization parameters
Polarization φ	φ rotation around probe axis
Polarization ϑ	ϑ rotation around an axis that is in the plane normal to probe axis (at measurement center), i.e., $\vartheta = 0$ is normal to probe axis

Calibration is Performed According to the Following Standards:

- IEEE Std 1528-2003, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", December 2003
- IEC 62209-1, "Procedure to measure the Specific Absorption Rate (SAR) for hand-held devices used in close proximity to the ear (frequency range of 300 MHz to 3 GHz)", February 2005

Methods Applied and Interpretation of Parameters:

- NORM_{x,y,z}**: Assessed for E-field polarization $\vartheta = 0$ ($f \leq 900$ MHz in TEM-cell; $f > 1800$ MHz: R22 waveguide). NORM_{x,y,z} are only intermediate values, i.e., the uncertainties of NORM_{x,y,z} does not affect the E^2 -field uncertainty inside TSL (see below ConvF).
- NORM(f)_{x,y,z}** = NORM_{x,y,z} * frequency_response (see Frequency Response Chart). This linearization is implemented in DASY4 software versions later than 4.2. The uncertainty of the frequency response is included in the stated uncertainty of ConvF.
- DCP_{x,y,z}**: DCP are numerical linearization parameters assessed based on the data of power sweep with CW signal (no uncertainty required). DCP does not depend on frequency nor media.
- PAR**: PAR is the Peak to Average Ratio that is not calibrated but determined based on the signal characteristics
- A_{x,y,z}; B_{x,y,z}; C_{x,y,z}; VR_{x,y,z}**: A, B, C are numerical linearization parameters assessed based on the data of power sweep for specific modulation signal. The parameters do not depend on frequency nor media. VR is the maximum calibration range expressed in RMS voltage across the diode.
- ConvF and Boundary Effect Parameters**: Assessed in flat phantom using E-field (or Temperature Transfer Standard for $f \leq 800$ MHz) and inside waveguide using analytical field distributions based on power measurements for $f > 800$ MHz. The same setups are used for assessment of the parameters applied for boundary compensation (alpha, depth) of which typical uncertainty values are given. These parameters are used in DASY4 software to improve probe accuracy close to the boundary. The sensitivity in TSL corresponds to NORM_{x,y,z} * ConvF whereby the uncertainty corresponds to that given for ConvF. A frequency dependent ConvF is used in DASY version 4.4 and higher which allows extending the validity from ± 50 MHz to ± 100 MHz.
- Spherical isotropy (3D deviation from isotropy)**: in a field of low gradients realized using a flat phantom exposed by a patch antenna.
- Sensor Offset**: The sensor offset corresponds to the offset of virtual measurement center from the probe tip (on probe axis). No tolerance required.

Probe ET3DV6

SN:1587

Manufactured: May 7, 2001
Calibrated: May 11, 2012

Calibrated for DASY/EASY Systems
(Note: non-compatible with DASY2 system!)

DASY/EASY - Parameters of Probe: ET3DV6 - SN:1587

Basic Calibration Parameters

	Sensor X	Sensor Y	Sensor Z	Unc (k=2)
Norm ($\mu\text{V}/(\text{V}/\text{m})^2$) ^A	2.14	1.92	1.79	$\pm 10.1 \%$
DCP (mV) ^B	99.0	97.5	99.1	

Modulation Calibration Parameters

UID	Communication System Name	PAR		A dB	B dB	C dB	VR mV	Unc ^E (k=2)
0	CW	0.00	X	0.00	0.00	1.00	119.0	$\pm 2.7 \%$
			Y	0.00	0.00	1.00	114.6	
			Z	0.00	0.00	1.00	111.6	

The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor $k=2$, which for a normal distribution corresponds to a coverage probability of approximately 95%.

^A The uncertainties of NormX,Y,Z do not affect the E^2 -field uncertainty inside TSL (see Pages 5 and 6)

^B Numerical linearization parameter; uncertainty not required.

^E Uncertainty is determined using the max. deviation from linear response applying rectangular distribution and is expressed for the square of the field value.

DASY/EASY - Parameters of Probe: ET3DV6 - SN:1587

Calibration Parameter Determined in Head Tissue Simulating Media

f (MHz) ^C	Relative Permittivity ^F	Conductivity (S/m) ^F	ConvF X	ConvF Y	ConvF Z	Alpha	Depth (mm)	Unct. (k=2)
835	41.5	0.90	6.33	6.33	6.33	0.24	3.00	± 12.0 %
900	41.5	0.97	6.18	6.18	6.18	0.28	3.00	± 12.0 %
1750	40.1	1.37	5.47	5.47	5.47	0.58	2.35	± 12.0 %
1900	40.0	1.40	5.18	5.18	5.18	0.80	1.68	± 12.0 %
2450	39.2	1.80	4.52	4.52	4.52	0.80	1.95	± 12.0 %

^C Frequency validity of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.

^F At frequencies below 3 GHz, the validity of tissue parameters (ϵ and σ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ϵ and σ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

DASY/EASY - Parameters of Probe: ET3DV6 - SN:1587

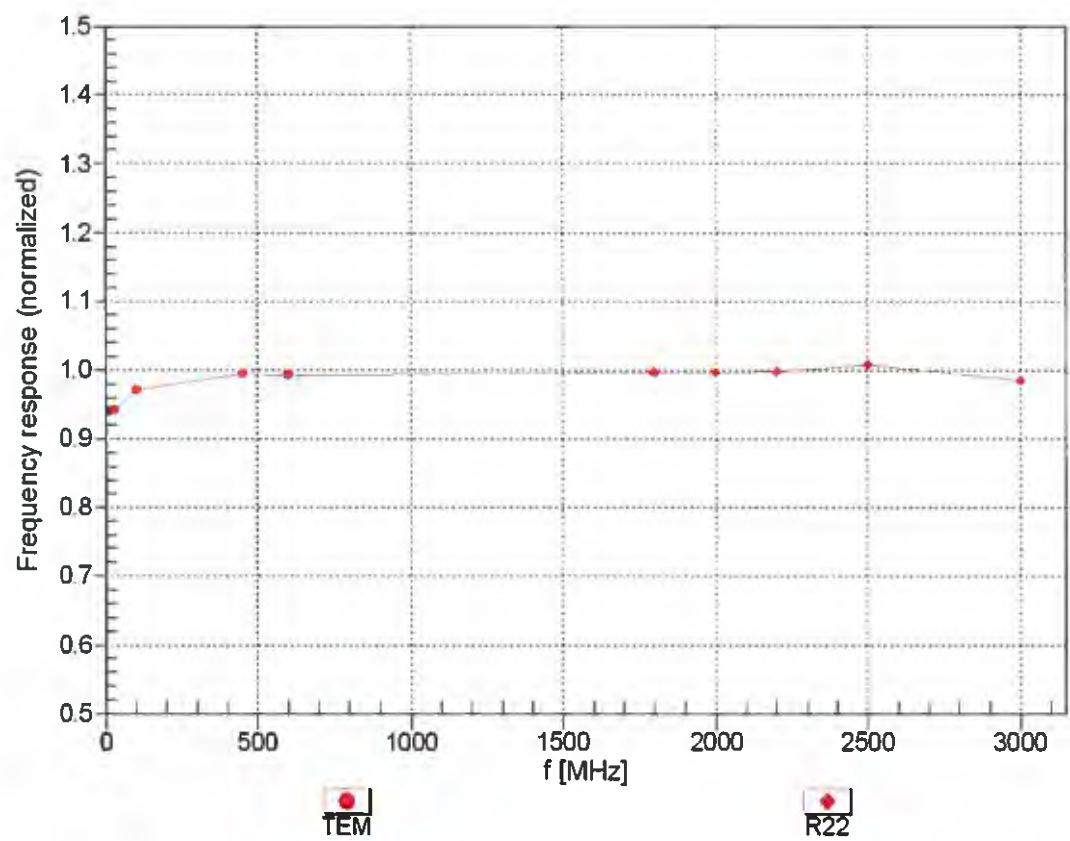
Calibration Parameter Determined in Body Tissue Simulating Media

f (MHz) ^C	Relative Permittivity ^F	Conductivity (S/m) ^F	ConvF X	ConvF Y	ConvF Z	Alpha	Depth (mm)	Unct. (k=2)
835	55.2	0.97	6.28	6.28	6.28	0.30	3.00	± 12.0 %
900	55.0	1.05	6.26	6.26	6.26	0.37	2.56	± 12.0 %
1750	53.4	1.49	4.92	4.92	4.92	0.74	2.18	± 12.0 %
1900	53.3	1.52	4.69	4.69	4.69	0.77	2.38	± 12.0 %
2450	52.7	1.95	4.13	4.13	4.13	0.80	2.02	± 12.0 %

^C Frequency validity of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.

^F At frequencies below 3 GHz, the validity of tissue parameters (ϵ and σ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ϵ and σ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

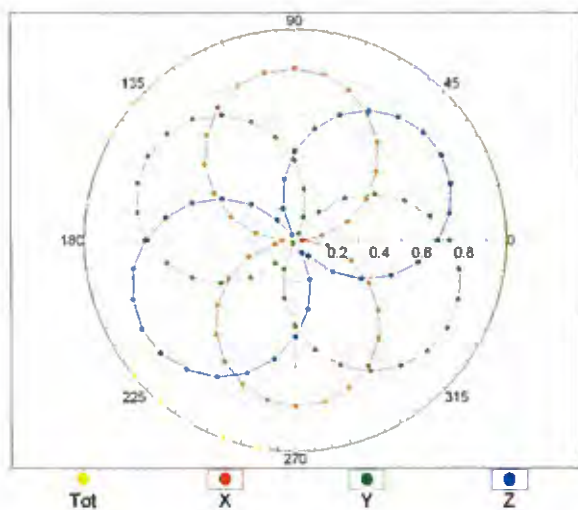
Frequency Response of E-Field
(TEM-Cell:ifi1110 EXX, Waveguide: R22)



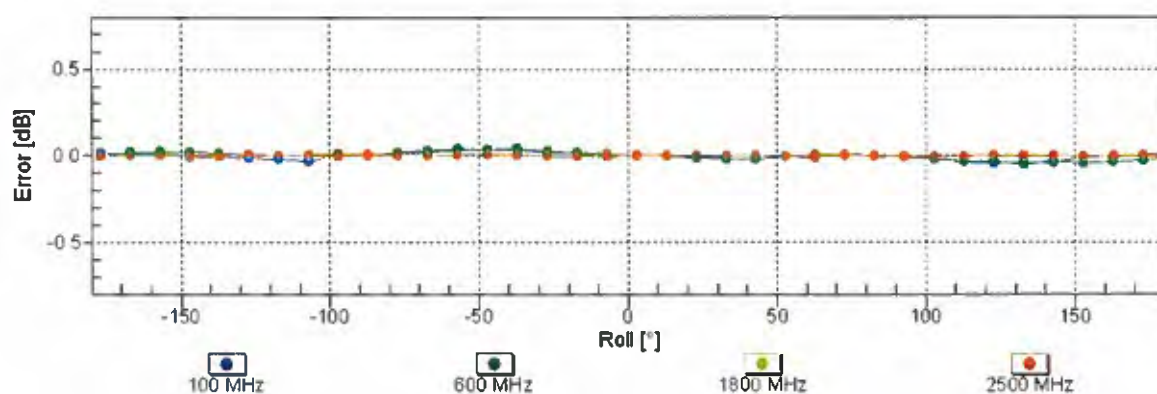
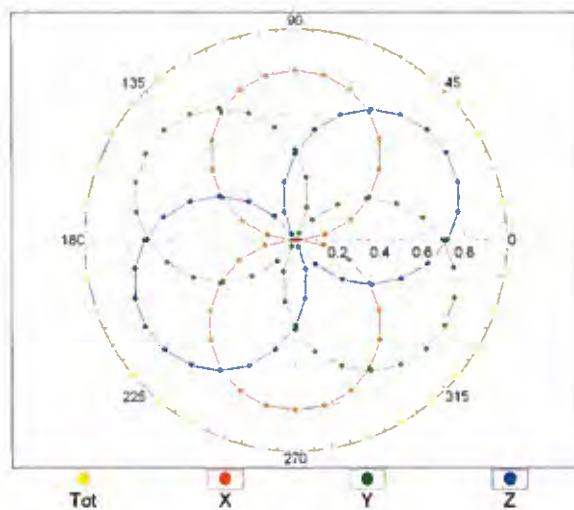
Uncertainty of Frequency Response of E-field: $\pm 6.3\%$ ($k=2$)

Receiving Pattern (ϕ), $\vartheta = 0^\circ$

$f=600$ MHz,TEM

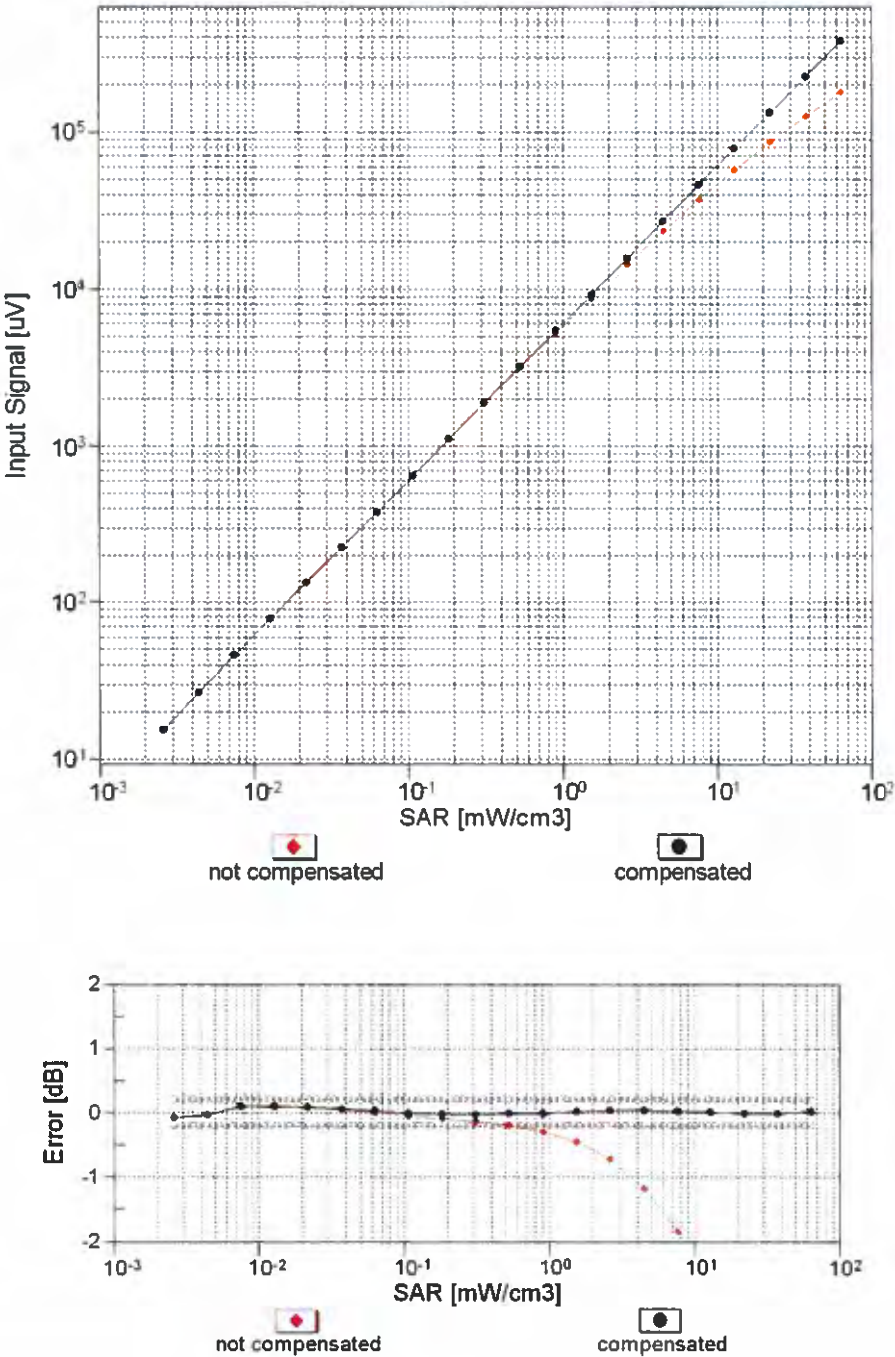


$f=1800$ MHz,R22



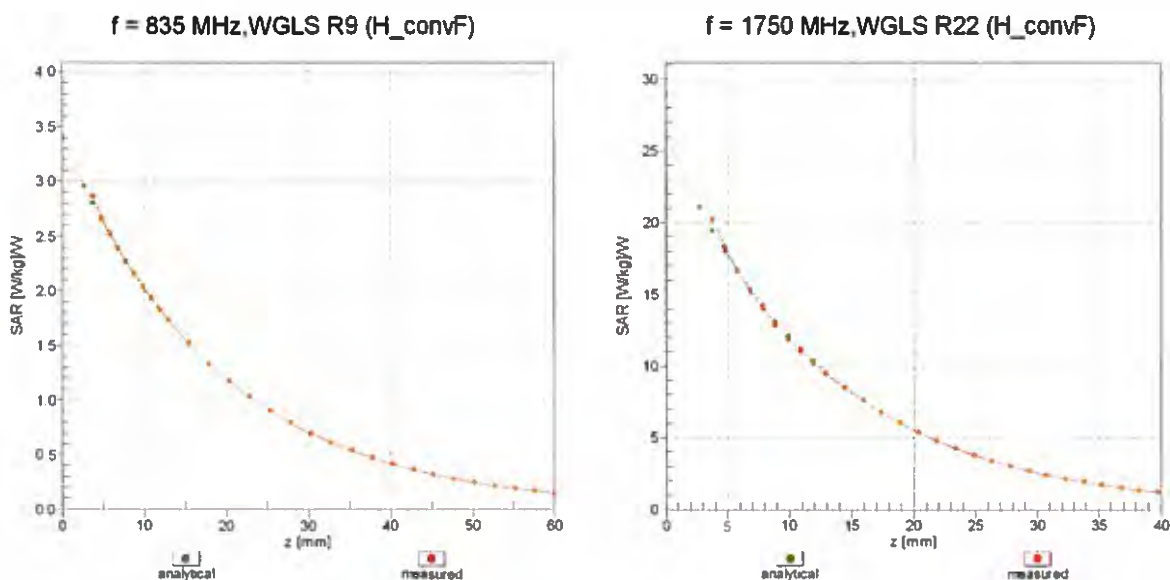
Uncertainty of Axial Isotropy Assessment: $\pm 0.5\%$ ($k=2$)

Dynamic Range f(SAR_{head})
(TEM cell , f = 900 MHz)



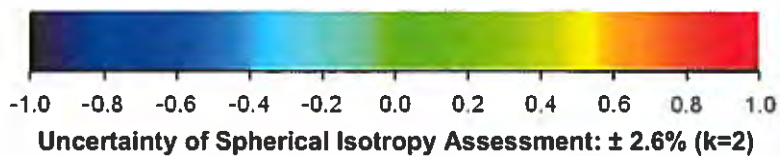
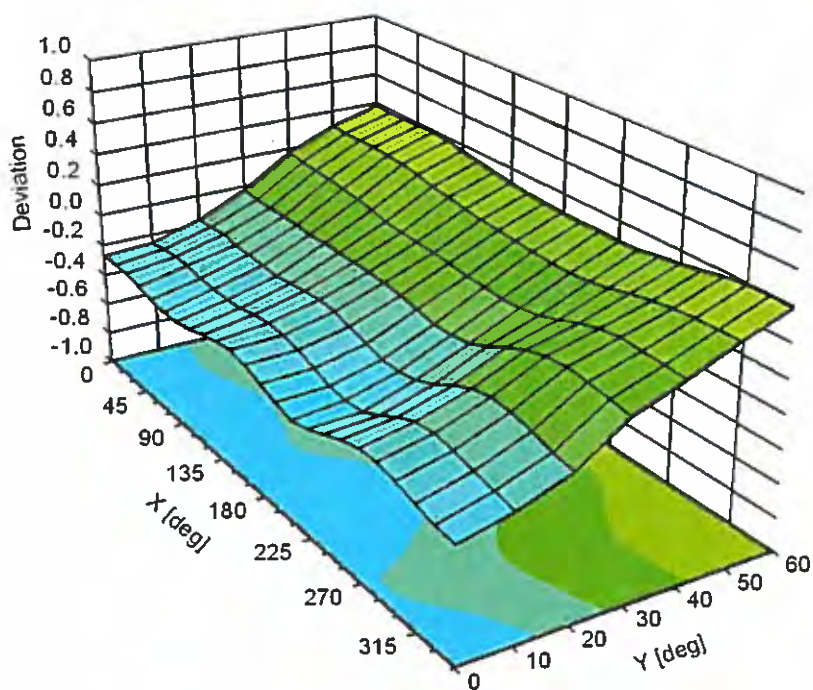
Uncertainty of Linearity Assessment: ± 0.6% (k=2)

Conversion Factor Assessment



Deviation from Isotropy in Liquid

Error (ϕ , θ), $f = 900 \text{ MHz}$



DASY/EASY - Parameters of Probe: ET3DV6 - SN:1587

Other Probe Parameters

Sensor Arrangement	Triangular
Connector Angle (°)	72.9
Mechanical Surface Detection Mode	enabled
Optical Surface Detection Mode	enabled
Probe Overall Length	337 mm
Probe Body Diameter	10 mm
Tip Length	10 mm
Tip Diameter	6.8 mm
Probe Tip to Sensor X Calibration Point	2.7 mm
Probe Tip to Sensor Y Calibration Point	2.7 mm
Probe Tip to Sensor Z Calibration Point	2.7 mm
Recommended Measurement Distance from Surface	4 mm

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Accreditation No.: **SCS 108**

Client **RFI**

Certificate No: **ET3-1528_Jul12**

CALIBRATION CERTIFICATE

Object **ET3DV6 - SN:1528**

Calibration procedure(s) **QA CAL-01.v8, QA CAL-12.v7, QA CAL-23.v4, QA CAL-25.v4
Calibration procedure for dosimetric E-field probes**

Calibration date: **July 26, 2012**

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).
The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature $(22 \pm 3)^{\circ}\text{C}$ and humidity $< 70\%$.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID	Cal Date (Certificate No.)	Scheduled Calibration
Power meter E4419B	GB41293874	29-Mar-12 (No. 217-01508)	Apr-13
Power sensor E4412A	MY41498087	29-Mar-12 (No. 217-01508)	Apr-13
Reference 3 dB Attenuator	SN: S5054 (3c)	27-Mar-12 (No. 217-01531)	Apr-13
Reference 20 dB Attenuator	SN: S5086 (20b)	27-Mar-12 (No. 217-01529)	Apr-13
Reference 30 dB Attenuator	SN: S5129 (30b)	27-Mar-12 (No. 217-01532)	Apr-13
Reference Probe ES3DV2	SN: 3013	29-Dec-11 (No. ES3-3013_Dec11)	Dec-12
DAE4	SN: 660	20-Jun-12 (No. DAE4-660_Jun12)	Jun-13
Secondary Standards	ID	Check Date (in house)	Scheduled Check
RF generator HP 8648C	US3642U01700	4-Aug-99 (in house check Apr-11)	In house check: Apr-13
Network Analyzer HP 8753E	US37390585	18-Oct-01 (in house check Oct-11)	In house check: Oct-12

Calibrated by:	Name Jeton Kastrati	Function Laboratory Technician	Signature 
Approved by:	Katja Pokovic	Technical Manager	

Issued: July 26, 2012

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Accreditation No.: **SCS 108**

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Glossary:

TSL	tissue simulating liquid
NORM _{x,y,z}	sensitivity in free space
ConvF	sensitivity in TSL / NORM _{x,y,z}
DCP	diode compression point
CF	crest factor (1/duty_cycle) of the RF signal
A, B, C	modulation dependent linearization parameters
Polarization ϕ	ϕ rotation around probe axis
Polarization ϑ	ϑ rotation around an axis that is in the plane normal to probe axis (at measurement center), i.e., $\vartheta = 0$ is normal to probe axis

Calibration is Performed According to the Following Standards:

- IEEE Std 1528-2003, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", December 2003
- IEC 62209-1, "Procedure to measure the Specific Absorption Rate (SAR) for hand-held devices used in close proximity to the ear (frequency range of 300 MHz to 3 GHz)", February 2005

Methods Applied and Interpretation of Parameters:

- NORM_{x,y,z}**: Assessed for E-field polarization $\vartheta = 0$ ($f \leq 900$ MHz in TEM-cell; $f > 1800$ MHz: R22 waveguide). NORM_{x,y,z} are only intermediate values, i.e., the uncertainties of NORM_{x,y,z} does not affect the E^2 -field uncertainty inside TSL (see below *ConvF*).
- NORM(f)_{x,y,z}** = NORM_{x,y,z} * *frequency_response* (see Frequency Response Chart). This linearization is implemented in DASY4 software versions later than 4.2. The uncertainty of the frequency response is included in the stated uncertainty of *ConvF*.
- DCP_{x,y,z}**: DCP are numerical linearization parameters assessed based on the data of power sweep with CW signal (no uncertainty required). DCP does not depend on frequency nor media.
- PAR**: PAR is the Peak to Average Ratio that is not calibrated but determined based on the signal characteristics
- A_{x,y,z}; B_{x,y,z}; C_{x,y,z}; VR_{x,y,z}**: A, B, C are numerical linearization parameters assessed based on the data of power sweep for specific modulation signal. The parameters do not depend on frequency nor media. VR is the maximum calibration range expressed in RMS voltage across the diode.
- ConvF and Boundary Effect Parameters**: Assessed in flat phantom using E-field (or Temperature Transfer Standard for $f \leq 800$ MHz) and inside waveguide using analytical field distributions based on power measurements for $f > 800$ MHz. The same setups are used for assessment of the parameters applied for boundary compensation (alpha, depth) of which typical uncertainty values are given. These parameters are used in DASY4 software to improve probe accuracy close to the boundary. The sensitivity in TSL corresponds to NORM_{x,y,z} * *ConvF* whereby the uncertainty corresponds to that given for *ConvF*. A frequency dependent *ConvF* is used in DASY version 4.4 and higher which allows extending the validity from ± 50 MHz to ± 100 MHz.
- Spherical isotropy (3D deviation from isotropy)**: in a field of low gradients realized using a flat phantom exposed by a patch antenna.
- Sensor Offset**: The sensor offset corresponds to the offset of virtual measurement center from the probe tip (on probe axis). No tolerance required.

Probe ET3DV6

SN:1528

Manufactured: March 21, 2000
Calibrated: July 26, 2012

Calibrated for DASY/EASY Systems
(Note: non-compatible with DASY2 system!)

DASY/EASY - Parameters of Probe: ET3DV6 - SN:1528

Basic Calibration Parameters

	Sensor X	Sensor Y	Sensor Z	Unc (k=2)
Norm ($\mu\text{V}/(\text{V}/\text{m})^2$) ^A	1.45	1.86	1.61	± 10.1 %
DCP (mV) ^B	95.5	97.5	100.3	

Modulation Calibration Parameters

UID	Communication System Name	PAR		A dB	B dB	C dB	VR mV	Unc ^E (k=2)
0	CW	0.00	X	0.00	0.00	1.00	166.6	±1.9 %
			Y	0.00	0.00	1.00	160.4	
			Z	0.00	0.00	1.00	170.5	

The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k=2, which for a normal distribution corresponds to a coverage probability of approximately 95%.

^A The uncertainties of NormX,Y,Z do not affect the E²-field uncertainty inside TSL (see Pages 5 and 6).

^B Numerical linearization parameter: uncertainty not required.

^E Uncertainty is determined using the max. deviation from linear response applying rectangular distribution and is expressed for the square of the field value.

DASY/EASY - Parameters of Probe: ET3DV6 - SN:1528

Calibration Parameter Determined in Head Tissue Simulating Media

f (MHz) ^C	Relative Permittivity ^F	Conductivity (S/m) ^F	ConvF X	ConvF Y	ConvF Z	Alpha	Depth (mm)	Unct. (k=2)
450	43.5	0.87	7.01	7.01	7.01	0.23	2.32	± 13.4 %
750	41.9	0.89	6.37	6.37	6.37	0.49	2.16	± 12.0 %
835	41.5	0.90	6.06	6.06	6.06	0.61	1.95	± 12.0 %
900	41.5	0.97	5.95	5.95	5.95	0.30	3.00	± 12.0 %
1450	40.5	1.20	5.22	5.22	5.22	0.49	2.80	± 12.0 %
1750	40.1	1.37	5.12	5.12	5.12	0.80	2.07	± 12.0 %
1900	40.0	1.40	4.92	4.92	4.92	0.80	2.10	± 12.0 %
2150	39.7	1.53	4.65	4.65	4.65	0.80	2.00	± 12.0 %
2450	39.2	1.80	4.31	4.31	4.31	0.80	1.74	± 12.0 %

^C Frequency validity of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.

^F At frequencies below 3 GHz, the validity of tissue parameters (ϵ and σ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ϵ and σ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

DASY/EASY - Parameters of Probe: ET3DV6 - SN:1528

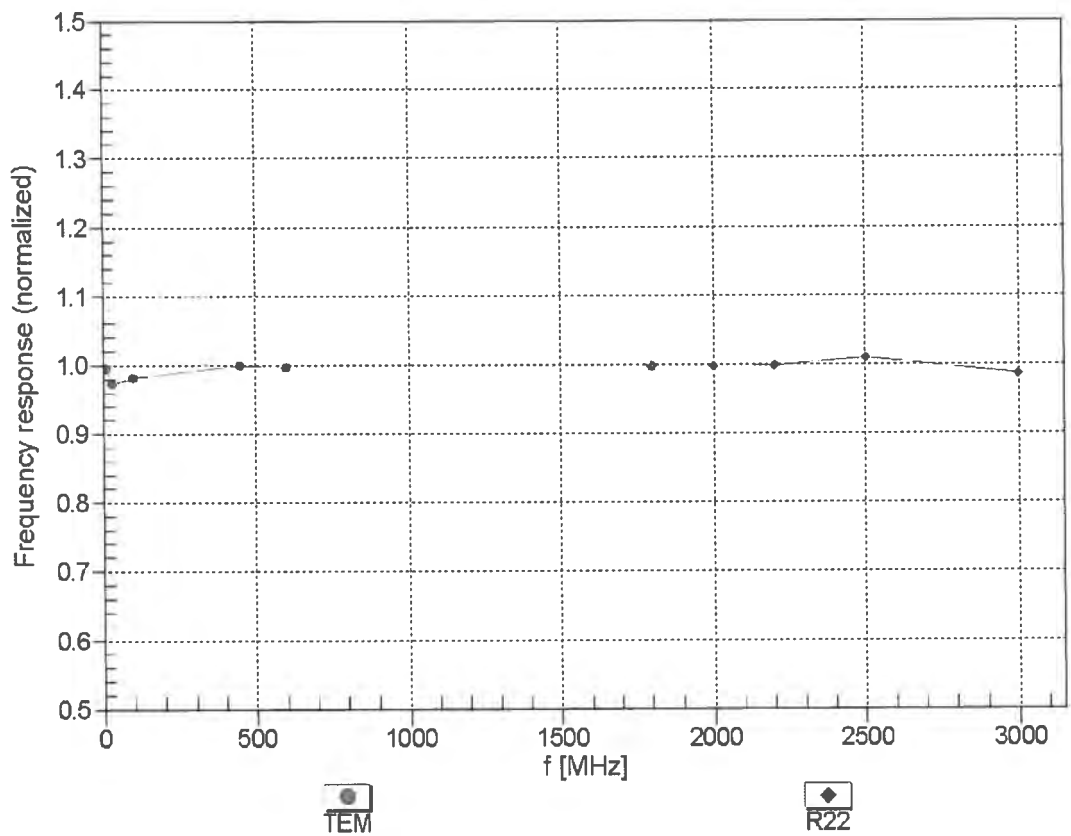
Calibration Parameter Determined in Body Tissue Simulating Media

f (MHz) ^C	Relative Permittivity ^F	Conductivity (S/m) ^F	ConvF X	ConvF Y	ConvF Z	Alpha	Depth (mm)	Unct. (k=2)
450	56.7	0.94	7.47	7.47	7.47	0.16	2.32	± 13.4 %
750	55.5	0.96	6.17	6.17	6.17	0.33	2.75	± 12.0 %
835	55.2	0.97	5.99	5.99	5.99	0.33	3.00	± 12.0 %
900	55.0	1.05	5.92	5.92	5.92	0.55	2.18	± 12.0 %
1450	54.0	1.30	5.11	5.11	5.11	0.76	2.07	± 12.0 %
1750	53.4	1.49	4.64	4.64	4.64	0.80	2.45	± 12.0 %
1900	53.3	1.52	4.42	4.42	4.42	0.80	2.33	± 12.0 %
2150	53.1	1.66	4.37	4.37	4.37	0.80	1.93	± 12.0 %
2450	52.7	1.95	3.99	3.99	3.99	0.56	0.98	± 12.0 %

^C Frequency validity of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.

^F At frequencies below 3 GHz, the validity of tissue parameters (ϵ and σ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ϵ and σ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

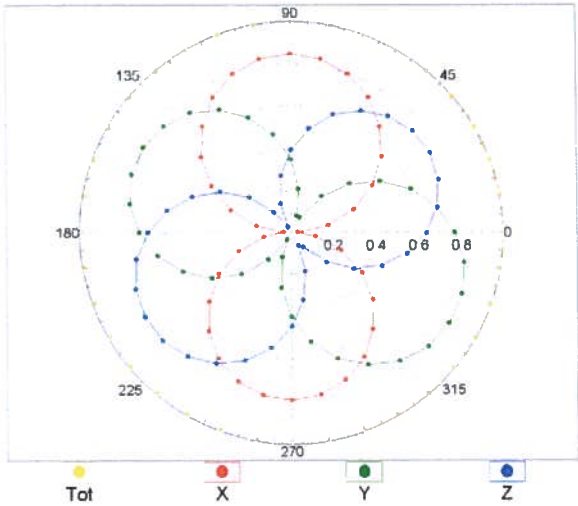
Frequency Response of E-Field
(TEM-Cell:ifi110 EXX, Waveguide: R22)



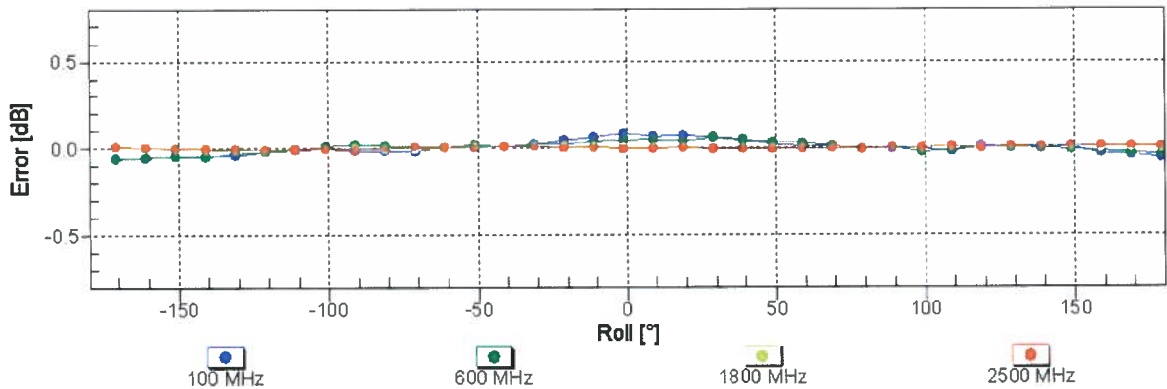
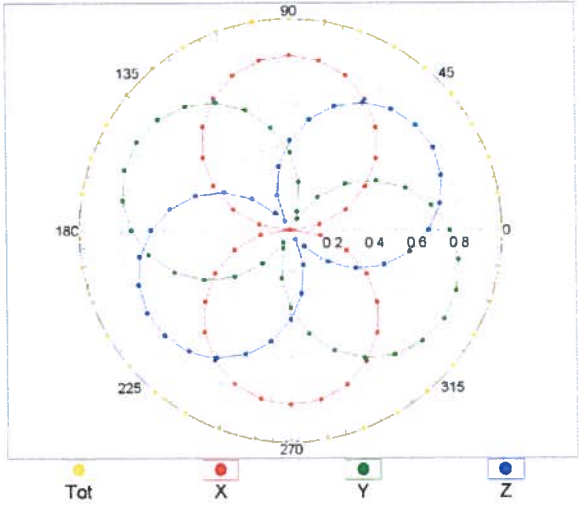
Uncertainty of Frequency Response of E-field: $\pm 6.3\%$ (k=2)

Receiving Pattern (ϕ), $\vartheta = 0^\circ$

f=600 MHz,TEM

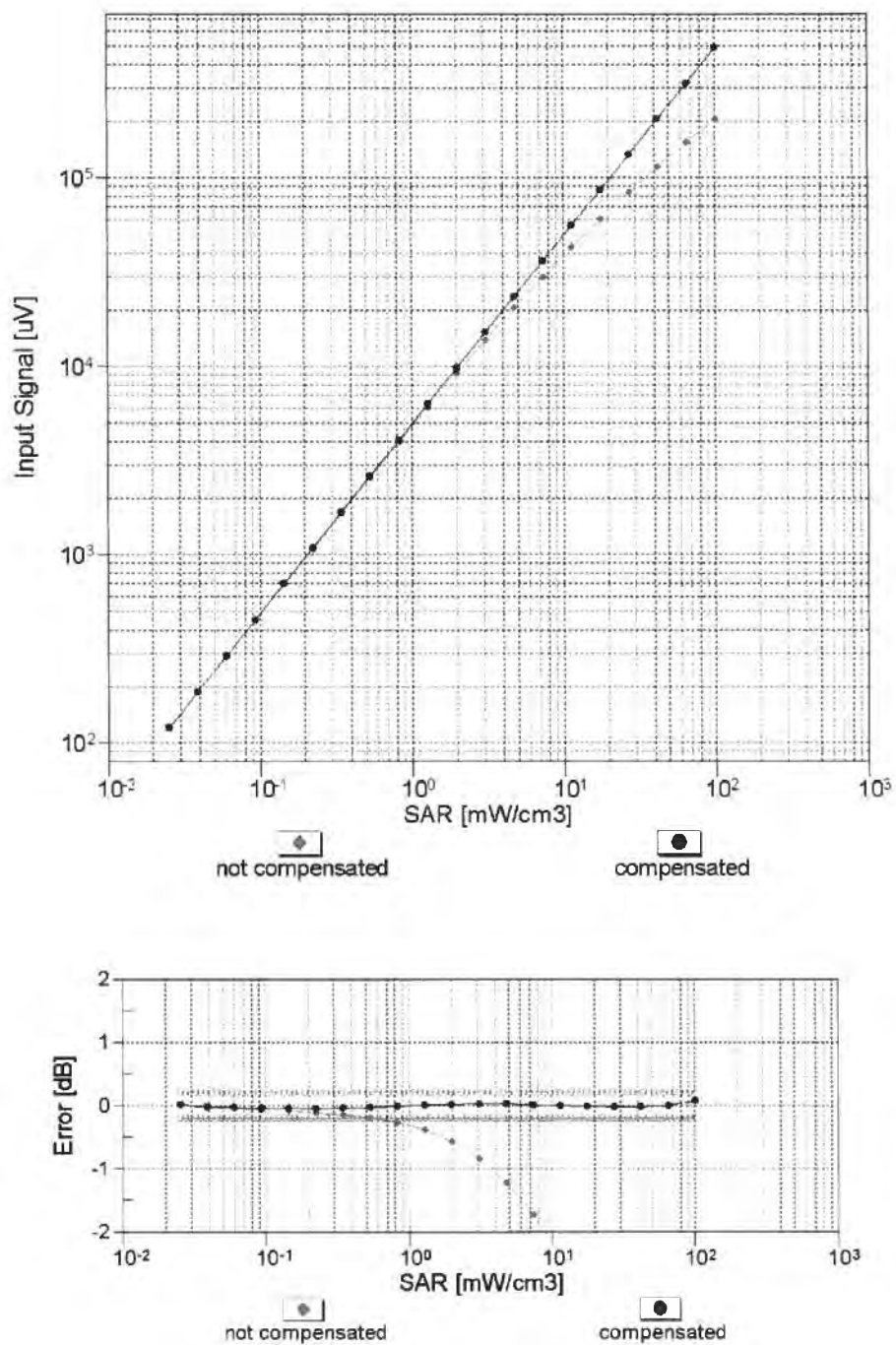


f=1800 MHz,R22



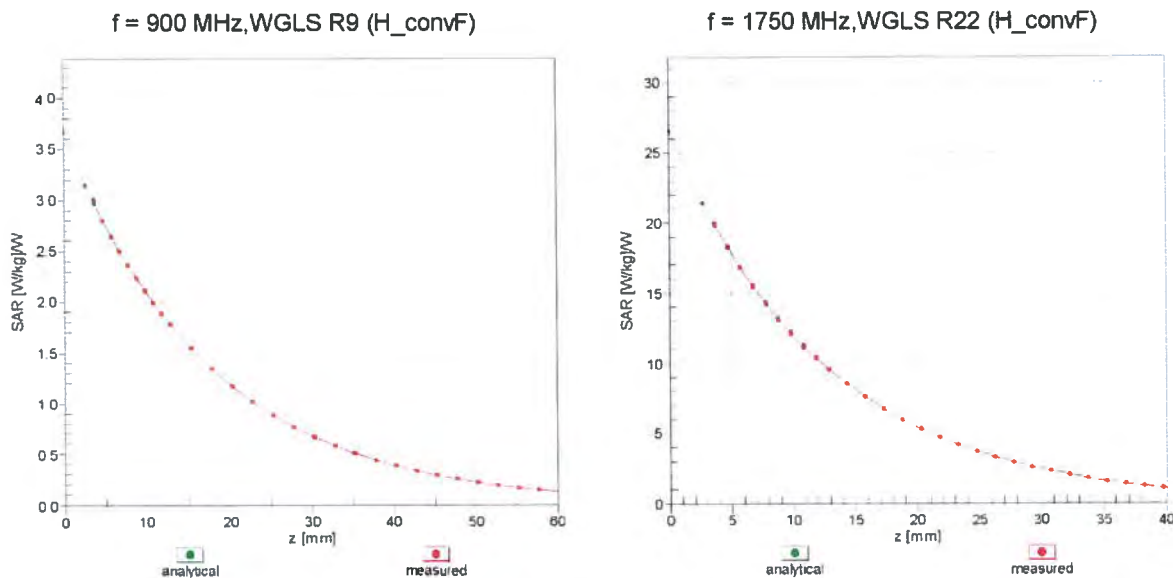
Uncertainty of Axial Isotropy Assessment: $\pm 0.5\%$ ($k=2$)

Dynamic Range $f(\text{SAR}_{\text{head}})$ (TEM cell , $f = 900 \text{ MHz}$)



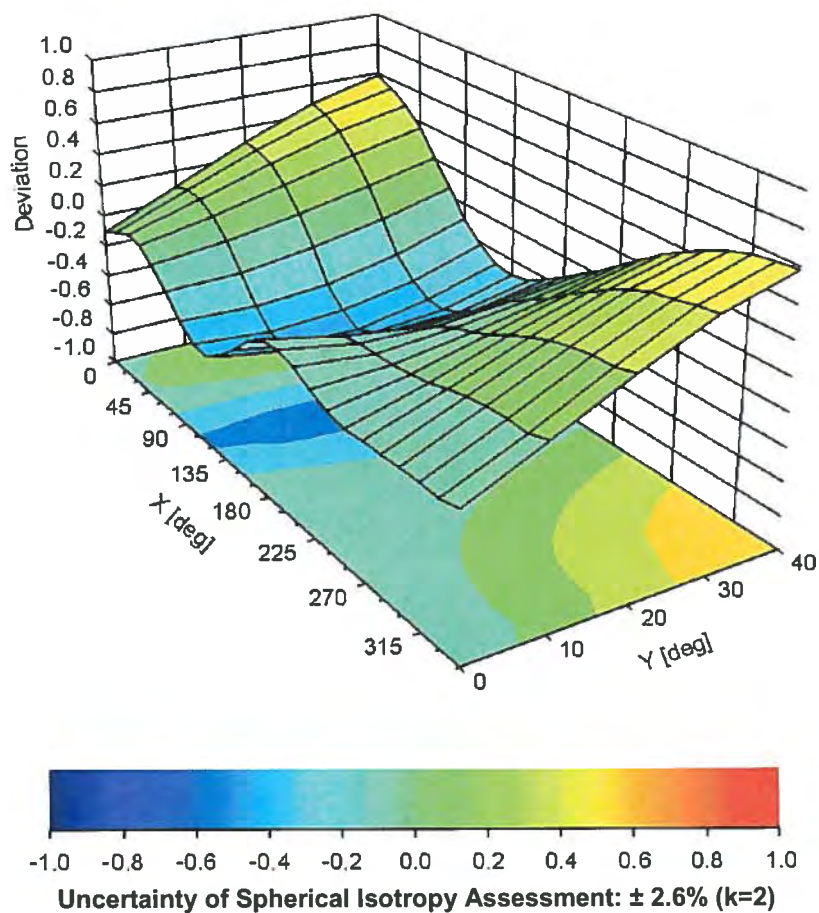
Uncertainty of Linearity Assessment: $\pm 0.6\%$ ($k=2$)

Conversion Factor Assessment



Deviation from Isotropy in Liquid

Error (ϕ, θ), $f = 900 \text{ MHz}$



DASY/EASY - Parameters of Probe: ET3DV6 - SN:1528

Other Probe Parameters

Sensor Arrangement	Triangular
Connector Angle (°)	18.9
Mechanical Surface Detection Mode	enabled
Optical Surface Detection Mode	enabled
Probe Overall Length	337 mm
Probe Body Diameter	10 mm
Tip Length	10 mm
Tip Diameter	6.8 mm
Probe Tip to Sensor X Calibration Point	2.7 mm
Probe Tip to Sensor Y Calibration Point	2.7 mm
Probe Tip to Sensor Z Calibration Point	2.7 mm
Recommended Measurement Distance from Surface	4 mm



check by *[Signature]* DATE: 7-August 2012

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Accreditation No.: **SCS 108**

Client **RFI**

Certificate No: **D900V2-035_Aug12**

CALIBRATION CERTIFICATE

Object **D900V2 - SN: 035**

Calibration procedure(s) **QA CAL-05.v8**
Calibration procedure for dipole validation kits above 700 MHz

Calibration date: **August 16, 2012**

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).
 The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature (22 ± 3)°C and humidity < 70%.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter EPM-442A	GB37480704	05-Oct-11 (No. 217-01451)	Oct-12
Power sensor HP 8481A	US37292783	05-Oct-11 (No. 217-01451)	Oct-12
Reference 20 dB Attenuator	SN: 5058 (20k)	27-Mar-12 (No. 217-01530)	Apr-13
Type-N mismatch combination	SN: 5047.2 / 06327	27-Mar-12 (No. 217-01533)	Apr-13
Reference Probe ES3DV3	SN: 3205	30-Dec-11 (No. ES3-3205_Dec11)	Dec-12
DAE4	SN: 601	27-Jun-12 (No. DAE4-601_Jun12)	Jun-13
Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power sensor HP 8481A	MY41092317	18-Oct-02 (in house check Oct-11)	In house check: Oct-13
RF generator R&S SMT-06	100005	04-Aug-99 (in house check Oct-11)	In house check: Oct-13
Network Analyzer HP 8753E	US37390585 S4206	18-Oct-01 (in house check Oct-11)	In house check: Oct-12

Calibrated by: **Israe El-Naouq** Function **Laboratory Technician**

Approved by: **Katja Pokovic** Technical Manager

Signature
[Signature of Israe El-Naouq]
[Signature of Katja Pokovic]

Issued: August 16, 2012

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Accreditation No.: **SCS 108**

Glossary:

TSL	tissue simulating liquid
ConvF	sensitivity in TSL / NORM x,y,z
N/A	not applicable or not measured

Calibration is Performed According to the Following Standards:

- IEEE Std 1528-2003, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", December 2003
- IEC 62209-1, "Procedure to measure the Specific Absorption Rate (SAR) for hand-held devices used in close proximity to the ear (frequency range of 300 MHz to 3 GHz)", February 2005
- Federal Communications Commission Office of Engineering & Technology (FCC OET), "Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields; Additional Information for Evaluating Compliance of Mobile and Portable Devices with FCC Limits for Human Exposure to Radiofrequency Emissions", Supplement C (Edition 01-01) to Bulletin 65

Additional Documentation:

- DASY4/5 System Handbook

Methods Applied and Interpretation of Parameters:

- Measurement Conditions:** Further details are available from the Validation Report at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated.
- Antenna Parameters with TSL:** The dipole is mounted with the spacer to position its feed point exactly below the center marking of the flat phantom section, with the arms oriented parallel to the body axis.
- Feed Point Impedance and Return Loss:** These parameters are measured with the dipole positioned under the liquid filled phantom. The impedance stated is transformed from the measurement at the SMA connector to the feed point. The Return Loss ensures low reflected power. No uncertainty required.
- Electrical Delay:** One-way delay between the SMA connector and the antenna feed point. No uncertainty required.
- SAR measured:** SAR measured at the stated antenna input power.
- SAR normalized:** SAR as measured, normalized to an input power of 1 W at the antenna connector.
- SAR for nominal TSL parameters:** The measured TSL parameters are used to calculate the nominal SAR result.

The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor $k=2$, which for a normal distribution corresponds to a coverage probability of approximately 95%.

Measurement Conditions

DASY system configuration, as far as not given on page 1.

DASY Version	DASY5	V52.8.2
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom	
Distance Dipole Center - TSL	15 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	900 MHz $\pm$ 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	41.5	0.97 mho/m
Measured Head TSL parameters	(22.0 $\pm$ 0.2) °C	40.6 $\pm$ 6 %	0.96 mho/m $\pm$ 6 %
Head TSL temperature change during test	< 0.5 °C	----	----

SAR result with Head TSL

SAR averaged over 1 cm ³ (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	2.62 mW / g
SAR for nominal Head TSL parameters	normalized to 1W	10.5 mW / g $\pm$ 17.0 % (k=2)

SAR averaged over 10 cm ³ (10 g) of Head TSL	condition	
SAR measured	250 mW input power	1.68 mW / g
SAR for nominal Head TSL parameters	normalized to 1W	6.74 mW / g $\pm$ 16.5 % (k=2)

Body TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	55.0	1.05 mho/m
Measured Body TSL parameters	(22.0 $\pm$ 0.2) °C	52.6 $\pm$ 6 %	1.06 mho/m $\pm$ 6 %
Body TSL temperature change during test	< 0.5 °C	----	----

SAR result with Body TSL

SAR averaged over 1 cm ³ (1 g) of Body TSL	Condition	
SAR measured	250 mW input power	2.74 mW / g
SAR for nominal Body TSL parameters	normalized to 1W	10.8 mW / g $\pm$ 17.0 % (k=2)

SAR averaged over 10 cm ³ (10 g) of Body TSL	condition	
SAR measured	250 mW input power	1.76 mW / g
SAR for nominal Body TSL parameters	normalized to 1W	6.96 mW / g $\pm$ 16.5 % (k=2)

Appendix

Antenna Parameters with Head TSL

Impedance, transformed to feed point	48.8 Ω - 5.8 j Ω
Return Loss	- 24.4 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	47.5 Ω - 5.5 j Ω
Return Loss	- 24.2 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.404 ns
----------------------------------	----------

After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured.

The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals. On some of the dipoles, small end caps are added to the dipole arms in order to improve matching when loaded according to the position as explained in the "Measurement Conditions" paragraph. The SAR data are not affected by this change. The overall dipole length is still according to the Standard.

No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

Additional EUT Data

Manufactured by	SPEAG
Manufactured on	February 26, 1998

DASY5 Validation Report for Head TSL

Date: 16.08.2012

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 900 MHz; Type: D900V2; Serial: D900V2 - SN: 035

Communication System: CW; Frequency: 900 MHz

Medium parameters used: $f = 900 \text{ MHz}$; $\sigma = 0.96 \text{ mho/m}$; $\epsilon_r = 40.6$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY52 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(5.97, 5.97, 5.97); Calibrated: 30.12.2011;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 27.06.2012
- Phantom: Flat Phantom 4.9L; Type: QD000P49AA; Serial: 1001
- DASY52 52.8.2(969); SEMCAD X 14.6.6(6824)

Dipole Calibration for Head Tissue/Pin=250 mW, d=15mm/Zoom Scan (7x7x7)/Cube 0:

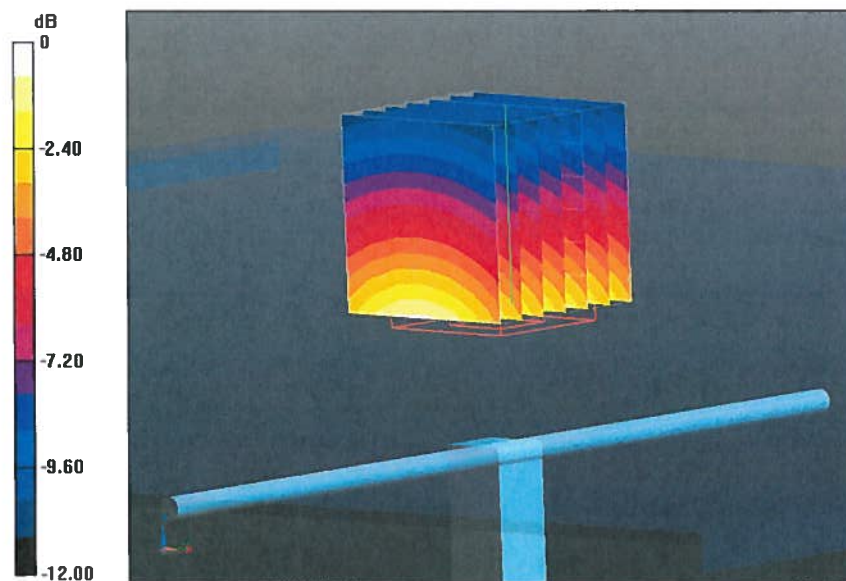
Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

Reference Value = 56.325 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 3.926 mW/g

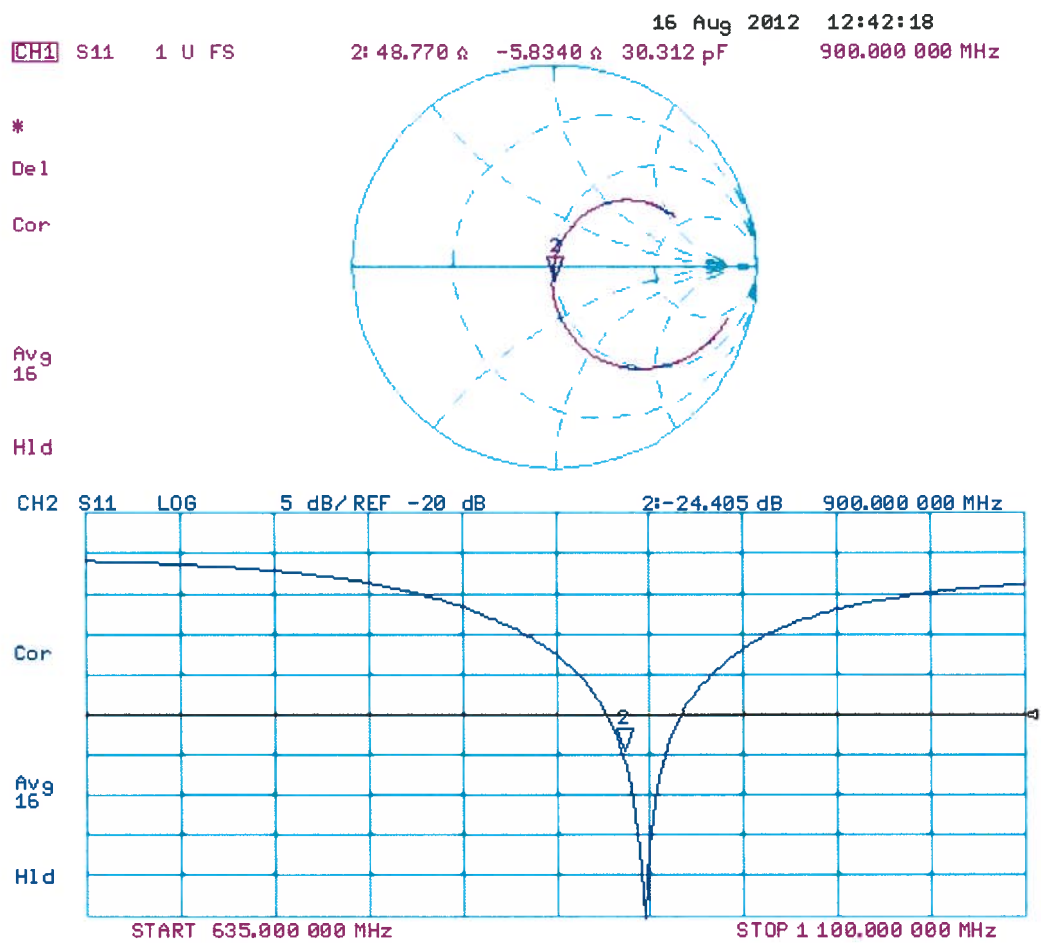
SAR(1 g) = 2.62 mW/g; SAR(10 g) = 1.68 mW/g

Maximum value of SAR (measured) = 3.06 W/kg



0 dB = 3.06 W/kg = 9.71 dB W/kg

Impedance Measurement Plot for Head TSL



DASY5 Validation Report for Body TSL

Date: 16.08.2012

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 900 MHz; Type: D900V2; Serial: D900V2 - SN: 035

Communication System: CW; Frequency: 900 MHz

Medium parameters used: $f = 900 \text{ MHz}$; $\sigma = 1.06 \text{ mho/m}$; $\epsilon_r = 52.6$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY52 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(5.94, 5.94, 5.94); Calibrated: 30.12.2011;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 27.06.2012
- Phantom: Flat Phantom 4.9L; Type: QD000P49AA; Serial: 1001
- DASY52 52.8.2(969); SEMCAD X 14.6.6(6824)

Dipole Calibration for Body Tissue/Pin=250 mW, d=15mm/Zoom Scan (7x7x7)/Cube 0:

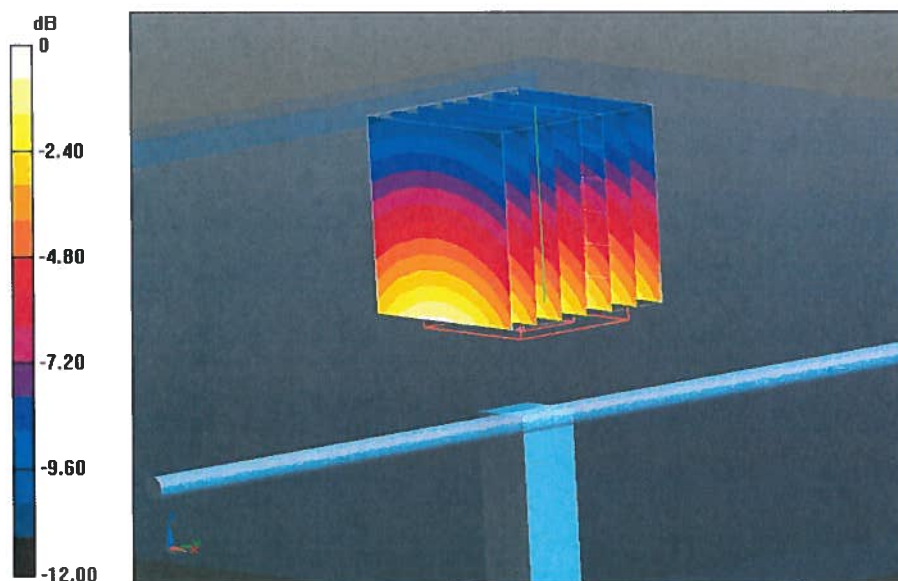
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 56.325 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 4.184 mW/g

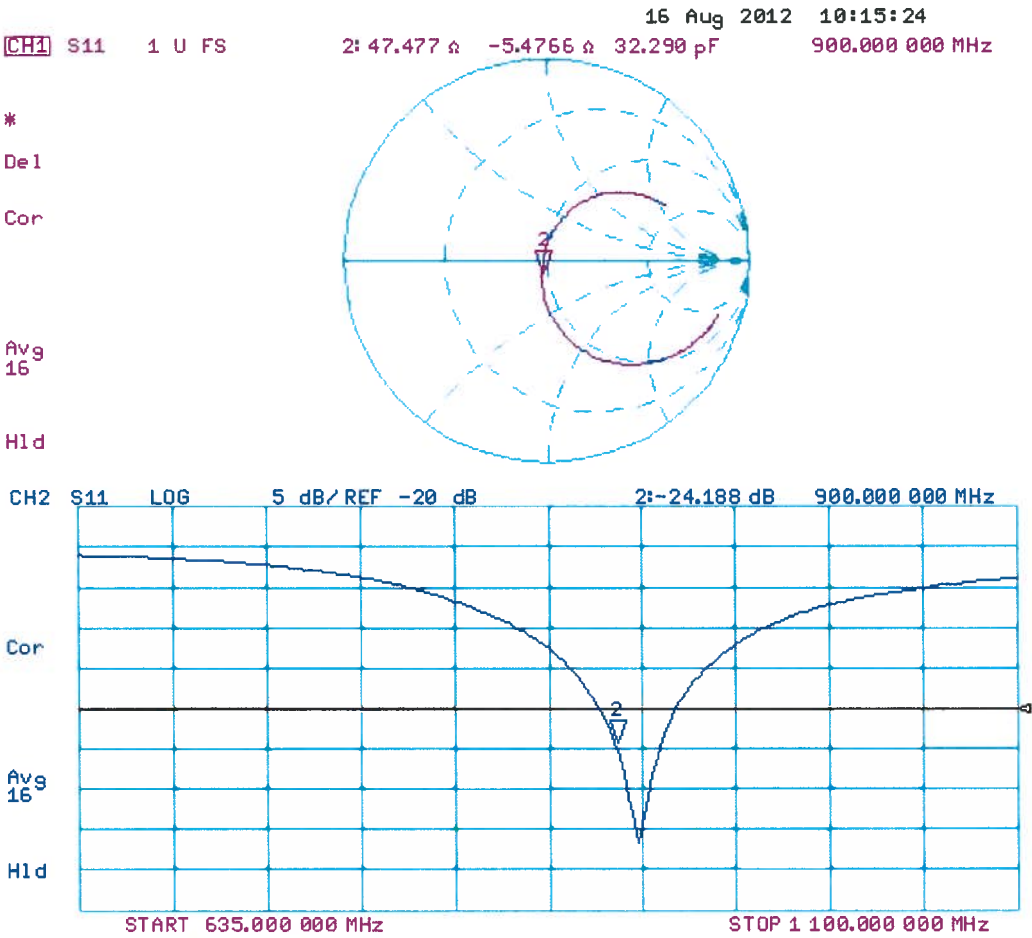
SAR(1 g) = 2.74 mW/g; SAR(10 g) = 1.76 mW/g

Maximum value of SAR (measured) = 3.18 W/kg



0 dB = 3.18 W/kg = 10.05 dB W/kg

Impedance Measurement Plot for Body TSL



checked by *AB*

Date: *Sept 1* 2012



S Schweizerischer Kalibrierdienst
C Service suisse d'étalonnage
S Servizio svizzero di taratura
S Swiss Calibration Service

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Accreditation No.: **SCS 108**

Client **RFI**

Certificate No: **D1900V2-537_Aug12**

CALIBRATION CERTIFICATE

Object **D1900V2 - SN: 537**

Calibration procedure(s) **QA CAL-05.v8**
Calibration procedure for dipole validation kits above 700 MHz

Calibration date: **August 14, 2012**

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).
The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature (22 ± 3)°C and humidity < 70%.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter EPM-442A	GB37480704	05-Oct-11 (No. 217-01451)	Oct-12
Power sensor HP 8481A	US37292783	05-Oct-11 (No. 217-01451)	Oct-12
Reference 20 dB Attenuator	SN: 5058 (20k)	27-Mar-12 (No. 217-01530)	Apr-13
Type-N mismatch combination	SN: 5047.2 / 06327	27-Mar-12 (No. 217-01533)	Apr-13
Reference Probe ES3DV3	SN: 3205	30-Dec-11 (No. ES3-3205_Dec11)	Dec-12
DAE4	SN: 601	27-Jun-12 (No. DAE4-601_Jun12)	Jun-13
Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power sensor HP 8481A	MY41092317	18-Oct-02 (in house check Oct-11)	In house check: Oct-13
RF generator R&S SMT-06	100005	04-Aug-99 (in house check Oct-11)	In house check: Oct-13
Network Analyzer HP 8753E	US37390585 S4206	18-Oct-01 (in house check Oct-11)	In house check: Oct-12

Calibrated by: **Israa El-Naouq** **Laboratory Technician**

Approved by: **Katja Pokovic** **Technical Manager**

Signature

Israa El-Naouq

Katja Pokovic

Issued: August 14, 2012

This calibration certificate shall not be reproduced except in full without written approval of the laboratory.



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Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: **SCS 108**

Glossary:

TSL	tissue simulating liquid
ConvF	sensitivity in TSL / NORM x,y,z
N/A	not applicable or not measured

Calibration is Performed According to the Following Standards:

- IEEE Std 1528-2003, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", December 2003
- IEC 62209-1, "Procedure to measure the Specific Absorption Rate (SAR) for hand-held devices used in close proximity to the ear (frequency range of 300 MHz to 3 GHz)", February 2005
- Federal Communications Commission Office of Engineering & Technology (FCC OET), "Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields; Additional Information for Evaluating Compliance of Mobile and Portable Devices with FCC Limits for Human Exposure to Radiofrequency Emissions", Supplement C (Edition 01-01) to Bulletin 65

Additional Documentation:

- DASY4/5 System Handbook

Methods Applied and Interpretation of Parameters:

- Measurement Conditions:** Further details are available from the Validation Report at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated.
- Antenna Parameters with TSL:** The dipole is mounted with the spacer to position its feed point exactly below the center marking of the flat phantom section, with the arms oriented parallel to the body axis.
- Feed Point Impedance and Return Loss:** These parameters are measured with the dipole positioned under the liquid filled phantom. The impedance stated is transformed from the measurement at the SMA connector to the feed point. The Return Loss ensures low reflected power. No uncertainty required.
- Electrical Delay:** One-way delay between the SMA connector and the antenna feed point. No uncertainty required.
- SAR measured:** SAR measured at the stated antenna input power.
- SAR normalized:** SAR as measured, normalized to an input power of 1 W at the antenna connector.
- SAR for nominal TSL parameters:** The measured TSL parameters are used to calculate the nominal SAR result.

The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor $k=2$, which for a normal distribution corresponds to a coverage probability of approximately 95%.

Measurement Conditions

DASY system configuration, as far as not given on page 1.

DASY Version	DASY5	V52.8.2
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom	
Distance Dipole Center - TSL	10 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	1900 MHz $\pm$ 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	40.0	1.40 mho/m
Measured Head TSL parameters	(22.0 $\pm$ 0.2) °C	39.9 $\pm$ 6 %	1.38 mho/m $\pm$ 6 %
Head TSL temperature change during test	< 0.5 °C	----	----

SAR result with Head TSL

SAR averaged over 1 cm ³ (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	9.78 mW / g
SAR for nominal Head TSL parameters	normalized to 1W	39.4 mW / g $\pm$ 17.0 % (k=2)

SAR averaged over 10 cm ³ (10 g) of Head TSL	condition	
SAR measured	250 mW input power	5.16 mW / g
SAR for nominal Head TSL parameters	normalized to 1W	20.7 mW / g $\pm$ 16.5 % (k=2)

Body TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	53.3	1.52 mho/m
Measured Body TSL parameters	(22.0 $\pm$ 0.2) °C	52.5 $\pm$ 6 %	1.53 mho/m $\pm$ 6 %
Body TSL temperature change during test	< 0.5 °C	----	----

SAR result with Body TSL

SAR averaged over 1 cm ³ (1 g) of Body TSL	Condition	
SAR measured	250 mW input power	10.2 mW / g
SAR for nominal Body TSL parameters	normalized to 1W	40.5 mW / g $\pm$ 17.0 % (k=2)

SAR averaged over 10 cm ³ (10 g) of Body TSL	condition	
SAR measured	250 mW input power	5.37 mW / g
SAR for nominal Body TSL parameters	normalized to 1W	21.4 mW / g $\pm$ 16.5 % (k=2)

Appendix

Antenna Parameters with Head TSL

Impedance, transformed to feed point	48.1 Ω - 5.7 j Ω
Return Loss	- 24.3 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	44.0 Ω - 5.2 j Ω
Return Loss	- 21.5 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.181 ns
----------------------------------	----------

After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured.

The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals. On some of the dipoles, small end caps are added to the dipole arms in order to improve matching when loaded according to the position as explained in the "Measurement Conditions" paragraph. The SAR data are not affected by this change. The overall dipole length is still according to the Standard.

No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

Additional EUT Data

Manufactured by	SPEAG
Manufactured on	March 22, 2001

DASY5 Validation Report for Head TSL

Date: 14.08.2012

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN: 537

Communication System: CW; Frequency: 1900 MHz

Medium parameters used: $f = 1900$ MHz; $\sigma = 1.38$ mho/m; $\epsilon_r = 39.9$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY52 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(5.01, 5.01, 5.01); Calibrated: 30.12.2011;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 27.06.2012
- Phantom: Flat Phantom 5.0 (front); Type: QD000P50AA; Serial: 1001
- DASY52 52.8.2(969); SEMCAD X 14.6.6(6824)

Dipole Calibration for Head Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:

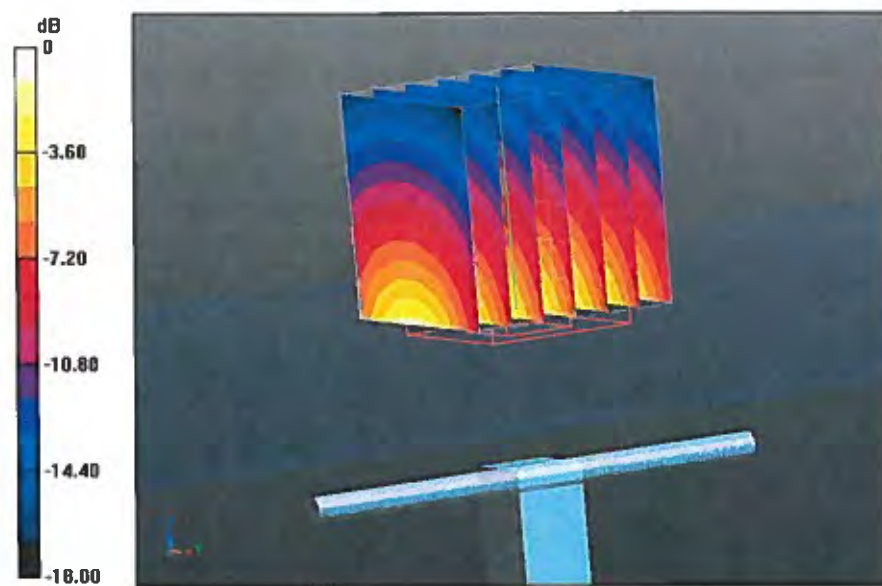
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 94.874 V/m; Power Drift = 0.08 dB

Peak SAR (extrapolated) = 17.436 mW/g

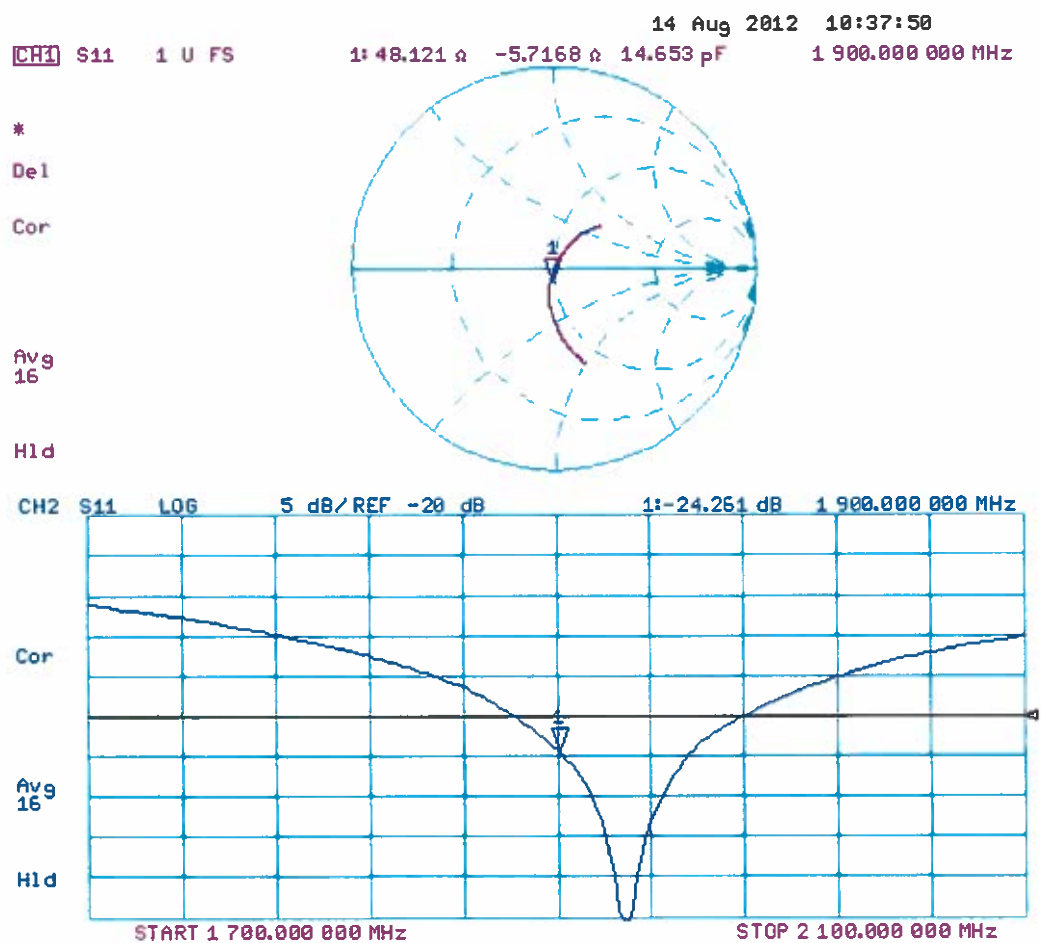
SAR(1 g) = 9.78 mW/g; SAR(10 g) = 5.16 mW/g

Maximum value of SAR (measured) = 11.9 W/kg



0 dB = 11.9 W/kg = 21.51 dB W/kg

Impedance Measurement Plot for Head TSL



DASY5 Validation Report for Body TSL

Date: 14.08.2012

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN: 537

Communication System: CW; Frequency: 1900 MHz

Medium parameters used: $f = 1900$ MHz; $\sigma = 1.53$ mho/m; $\epsilon_r = 52.5$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY52 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(4.62, 4.62, 4.62); Calibrated: 30.12.2011;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 27.06.2012
- Phantom: Flat Phantom 5.0 (back); Type: QD000P50AA; Serial: 1002
- DASY52 52.8.2(969); SEMCAD X 14.6.6(6824)

Dipole Calibration for Body Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 94.874 V/m; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 17.899 mW/g

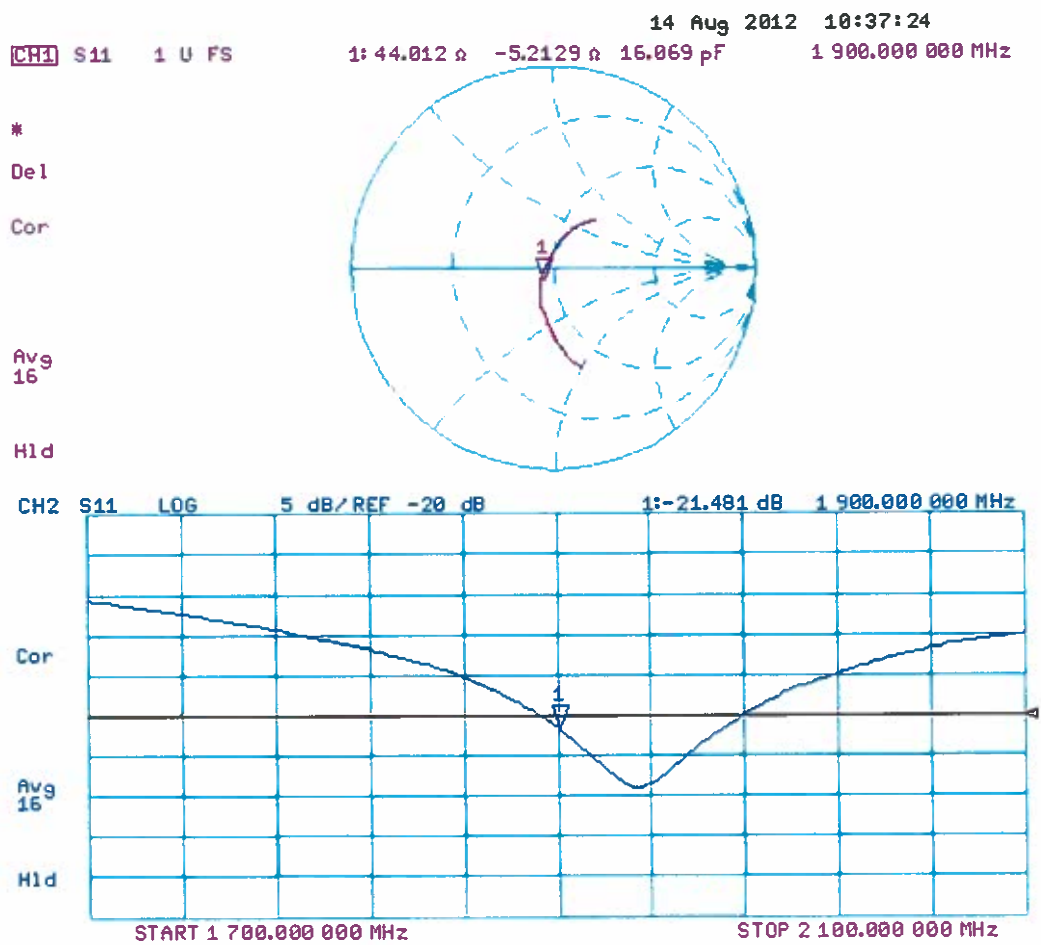
SAR(1 g) = 10.2 mW/g; SAR(10 g) = 5.37 mW/g

Maximum value of SAR (measured) = 12.8 W/kg



0 dB = 12.8 W/kg = 22.14 dB W/kg

Impedance Measurement Plot for Body TSL





Checked by *R. D.* DATE: 7 ^{Sept} August 2012

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 Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: **SCS 108**

Client **RFI**

Certificate No: **D2440V2-701_Aug12**

CALIBRATION CERTIFICATE

Object **D2440V2 - SN: 701**

Calibration procedure(s) **QA CAL-05.v8**
Calibration procedure for dipole validation kits above 700 MHz

Calibration date: **August 13, 2012**

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).
 The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature (22 ± 3)°C and humidity < 70%.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter EPM-442A	GB37480704	05-Oct-11 (No. 217-01451)	Oct-12
Power sensor HP 8481A	US37292783	05-Oct-11 (No. 217-01451)	Oct-12
Reference 20 dB Attenuator	SN: 5058 (20k)	27-Mar-12 (No. 217-01530)	Apr-13
Type-N mismatch combination	SN: 5047.2 / 06327	27-Mar-12 (No. 217-01533)	Apr-13
Reference Probe ES3DV3	SN: 3205	30-Dec-11 (No. ES3-3205_Dec11)	Dec-12
DAE4	SN: 601	27-Jun-12 (No. DAE4-601_Jun12)	Jun-13
Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power sensor HP 8481A	MY41092317	18-Oct-02 (in house check Oct-11)	In house check: Oct-13
RF generator R&S SMT-06	100005	04-Aug-99 (in house check Oct-11)	In house check: Oct-13
Network Analyzer HP 8753E	US37390585 S4206	18-Oct-01 (in house check Oct-11)	In house check: Oct-12

Calibrated by: **Israe El-Naouq** **Function**
Laboratory Technician

Signature

Approved by: **Katja Pokovic** **Technical Manager**

Issued: August 13, 2012

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Accreditation No.: **SCS 108**

Glossary:

TSL	tissue simulating liquid
ConvF	sensitivity in TSL / NORM x,y,z
N/A	not applicable or not measured

Calibration is Performed According to the Following Standards:

- a) IEEE Std 1528-2003, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", December 2003
- b) IEC 62209-1, "Procedure to measure the Specific Absorption Rate (SAR) for hand-held devices used in close proximity to the ear (frequency range of 300 MHz to 3 GHz)", February 2005
- c) Federal Communications Commission Office of Engineering & Technology (FCC OET), "Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields; Additional Information for Evaluating Compliance of Mobile and Portable Devices with FCC Limits for Human Exposure to Radiofrequency Emissions", Supplement C (Edition 01-01) to Bulletin 65

Additional Documentation:

- d) DASY4/5 System Handbook

Methods Applied and Interpretation of Parameters:

- *Measurement Conditions:* Further details are available from the Validation Report at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated.
- *Antenna Parameters with TSL:* The dipole is mounted with the spacer to position its feed point exactly below the center marking of the flat phantom section, with the arms oriented parallel to the body axis.
- *Feed Point Impedance and Return Loss:* These parameters are measured with the dipole positioned under the liquid filled phantom. The impedance stated is transformed from the measurement at the SMA connector to the feed point. The Return Loss ensures low reflected power. No uncertainty required.
- *Electrical Delay:* One-way delay between the SMA connector and the antenna feed point. No uncertainty required.
- *SAR measured:* SAR measured at the stated antenna input power.
- *SAR normalized:* SAR as measured, normalized to an input power of 1 W at the antenna connector.
- *SAR for nominal TSL parameters:* The measured TSL parameters are used to calculate the nominal SAR result.

The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor $k=2$, which for a normal distribution corresponds to a coverage probability of approximately 95%.

Measurement Conditions

DASY system configuration, as far as not given on page 1.

DASY Version	DASY5	V52.8.2
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom	
Distance Dipole Center - TSL	10 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	2450 MHz $\pm$ 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	39.2	1.80 mho/m
Measured Head TSL parameters	(22.0 $\pm$ 0.2) °C	39.2 $\pm$ 6 %	1.81 mho/m $\pm$ 6 %
Head TSL temperature change during test	< 0.5 °C	----	----

SAR result with Head TSL

SAR averaged over 1 cm ³ (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	13.1 mW / g
SAR for nominal Head TSL parameters	normalized to 1W	52.3 mW / g $\pm$ 17.0 % (k=2)

SAR averaged over 10 cm ³ (10 g) of Head TSL	condition	
SAR measured	250 mW input power	6.06 mW / g
SAR for nominal Head TSL parameters	normalized to 1W	24.2 mW / g $\pm$ 16.5 % (k=2)

Body TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	52.7	1.95 mho/m
Measured Body TSL parameters	(22.0 $\pm$ 0.2) °C	51.3 $\pm$ 6 %	1.99 mho/m $\pm$ 6 %
Body TSL temperature change during test	< 0.5 °C	----	----

SAR result with Body TSL

SAR averaged over 1 cm ³ (1 g) of Body TSL	Condition	
SAR measured	250 mW input power	13.2 mW / g
SAR for nominal Body TSL parameters	normalized to 1W	52.0 mW / g $\pm$ 17.0 % (k=2)

SAR averaged over 10 cm ³ (10 g) of Body TSL	condition	
SAR measured	250 mW input power	6.09 mW / g
SAR for nominal Body TSL parameters	normalized to 1W	24.1 mW / g $\pm$ 16.5 % (k=2)

Appendix

Antenna Parameters with Head TSL

Impedance, transformed to feed point	48.4 Ω - 8.2 j Ω
Return Loss	- 21.5 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	45.8 Ω - 6.9 j Ω
Return Loss	- 21.5 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.141 ns
----------------------------------	----------

After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured.

The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals. On some of the dipoles, small end caps are added to the dipole arms in order to improve matching when loaded according to the position as explained in the "Measurement Conditions" paragraph. The SAR data are not affected by this change. The overall dipole length is still according to the Standard.

No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

Additional EUT Data

Manufactured by	SPEAG
Manufactured on	August 24, 2000

DASY5 Validation Report for Head TSL

Date: 13.08.2012

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 2440 MHz; Type: D2440V2; Serial: D2440V2 - SN: 701

Communication System: CW; Frequency: 2450 MHz

Medium parameters used: $f = 2450$ MHz; $\sigma = 1.81$ mho/m; $\epsilon_r = 39.2$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY52 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(4.45, 4.45, 4.45); Calibrated: 30.12.2011;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 27.06.2012
- Phantom: Flat Phantom 5.0 (front); Type: QD000P50AA; Serial: 1001
- DASY52 52.8.2(969); SEMCAD X 14.6.6(6824)

Dipole Calibration for Head Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:

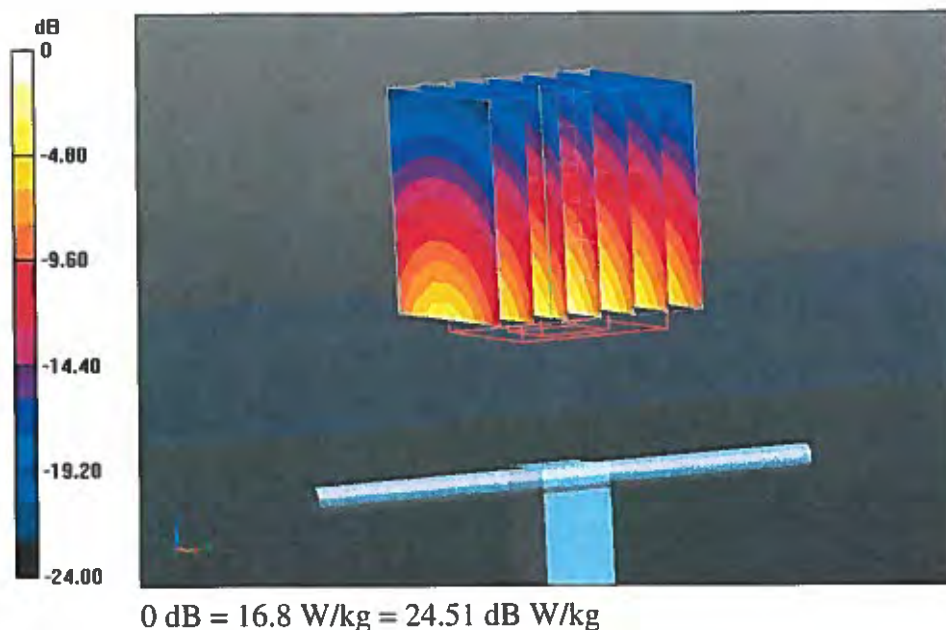
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 99.955 V/m; Power Drift = 0.00 dB

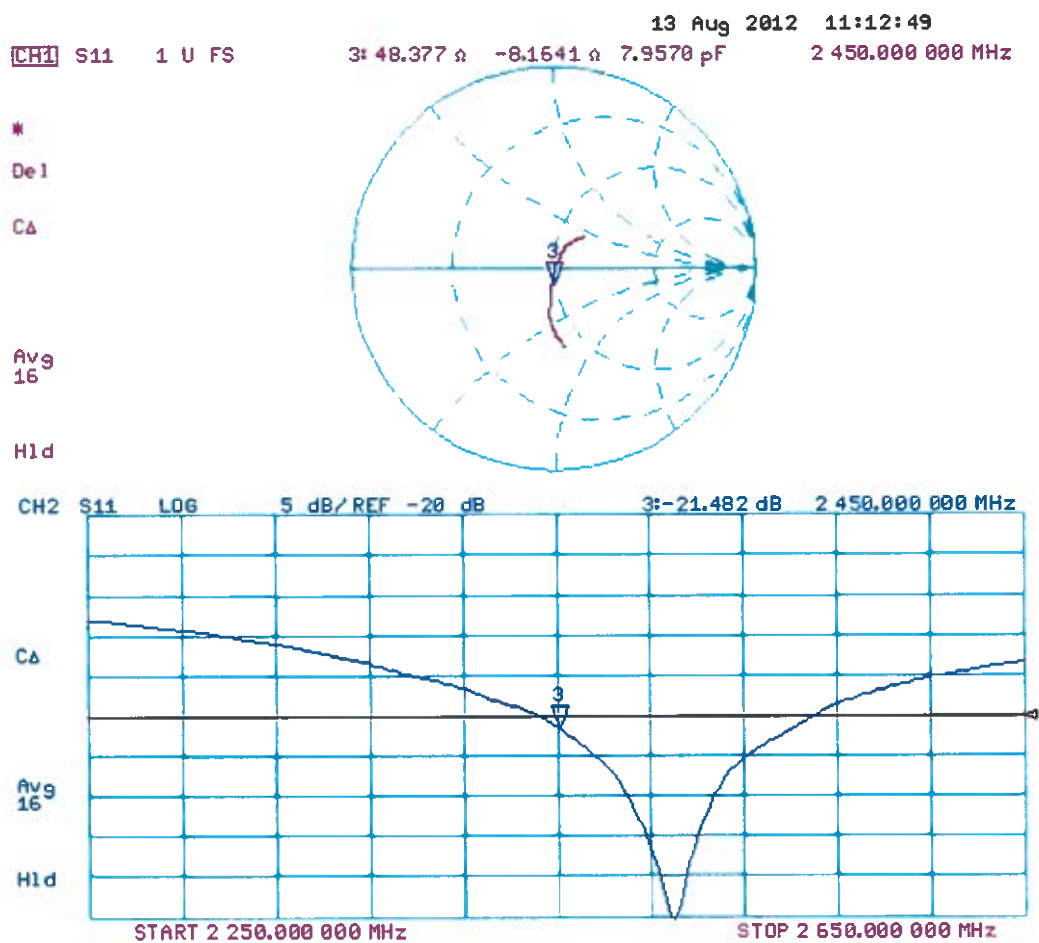
Peak SAR (extrapolated) = 27.027 mW/g

SAR(1 g) = 13.1 mW/g; SAR(10 g) = 6.06 mW/g

Maximum value of SAR (measured) = 16.8 W/kg



Impedance Measurement Plot for Head TSL



DASY5 Validation Report for Body TSL

Date: 13.08.2012

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 2440 MHz; Type: D2440V2; Serial: D2440V2 - SN: 701

Communication System: CW; Frequency: 2450 MHz

Medium parameters used: $f = 2450$ MHz; $\sigma = 1.99$ mho/m; $\epsilon_r = 51.3$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY52 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(4.26, 4.26, 4.26); Calibrated: 30.12.2011;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 27.06.2012
- Phantom: Flat Phantom 5.0 (back); Type: QD000P50AA; Serial: 1002
- DASY52 52.8.2(969); SEMCAD X 14.6.6(6824)

Dipole Calibration for Body Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:

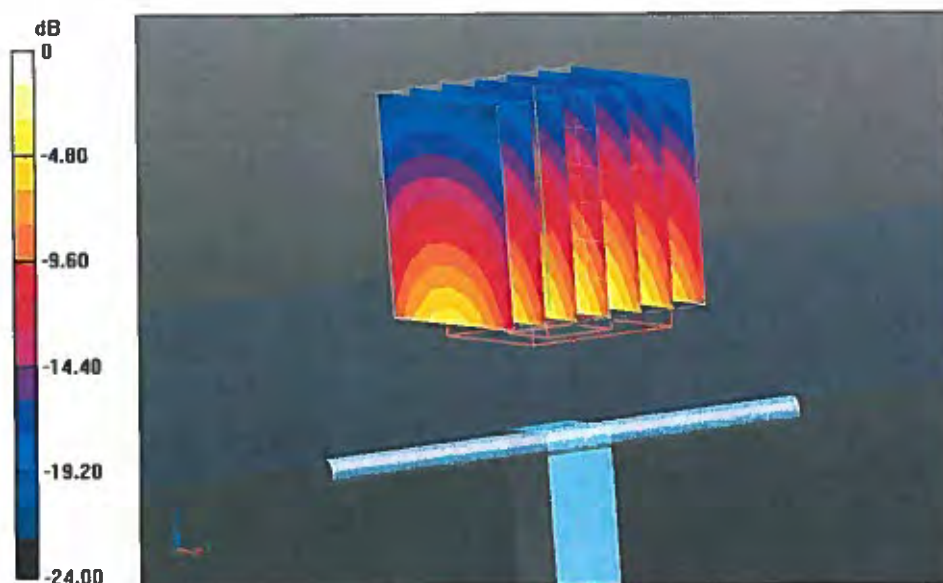
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 96.149 V/m; Power Drift = 0.00 dB

Peak SAR (extrapolated) = 26.944 mW/g

SAR(1 g) = 13.2 mW/g; SAR(10 g) = 6.09 mW/g

Maximum value of SAR (measured) = 17.1 W/kg



0 dB = 17.1 W/kg = 24.66 dB W/kg

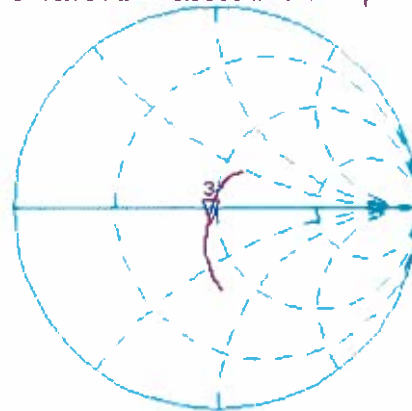
Impedance Measurement Plot for Body TSL

13 Aug 2012 11:12:17
 CH1 S11 1 U FS 3: 45.754 Ω -6.8809 Ω 9.4409 pF 2 450.000 000 MHz

*
 De1
 CA

Avg
 16

H1d

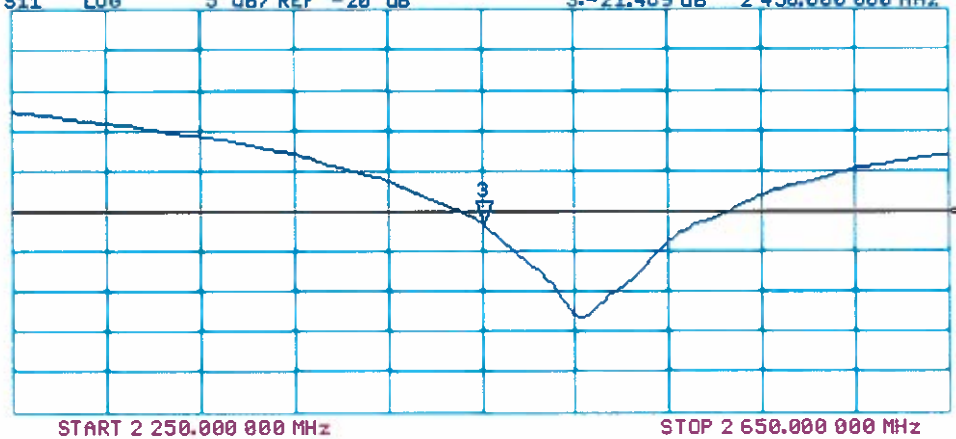


CH2 S11 LOG 5 dB/REF -20 dB 3: -21.489 dB 2 450.000 000 MHz

CA

Avg
 16

H1d





checked by *AE*
DATE: 26-Feb-2013

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Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: **SCS 108**

Client **RFI**

A1377

Certificate No: **D5GHzV2-1016_Feb13**

CALIBRATION CERTIFICATE

Object **D5GHzV2 - SN: 1016**

Calibration procedure(s) **QA CAL-22.v2**
Calibration procedure for dipole validation kits between 3-6 GHz

Calibration date: **February 20, 2013**

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).
The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature $(22 \pm 3)^{\circ}\text{C}$ and humidity $< 70\%$.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter EPM-442A	GB37480704	01-Nov-12 (No. 217-01640)	Oct-13
Power sensor HP 8481A	US37292783	01-Nov-12 (No. 217-01640)	Oct-13
Reference 20 dB Attenuator	SN: 5058 (20k)	27-Mar-12 (No. 217-01530)	Apr-13
Type-N mismatch combination	SN: 5047.3 / 06327	27-Mar-12 (No. 217-01533)	Apr-13
Reference Probe EX3DV4	SN: 3503	28-Dec-12 (No. EX3-3503_Dec12)	Dec-13
DAE4	SN: 601	27-Jun-12 (No. DAE4-601_Jun12)	Jun-13
Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power sensor HP 8481A	MY41092317	18-Oct-02 (in house check Oct-11)	In house check: Oct-13
RF generator R&S SMT-06	100005	04-Aug-99 (in house check Oct-11)	In house check: Oct-13
Network Analyzer HP 8753E	US37390585 S4206	18-Oct-01 (in house check Oct-12)	In house check: Oct-13

	Name	Function	Signature
Calibrated by:	Israe El-Naouq	Laboratory Technician	<i>Israe El-Naouq</i>
Approved by:	Katja Pokovic	Technical Manager	<i>Katja Pokovic</i>

Issued: February 20, 2013

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Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: **SCS 108**

Glossary:

TSL	tissue simulating liquid
ConvF	sensitivity in TSL / NORM x,y,z
N/A	not applicable or not measured

Calibration is Performed According to the Following Standards:

- a) IEC 62209-2, "Evaluation of Human Exposure to Radio Frequency Fields from Handheld and Body-Mounted Wireless Communication Devices in the Frequency Range of 30 MHz to 6 GHz: Human models, Instrumentation, and Procedures"; Part 2: "Procedure to determine the Specific Absorption Rate (SAR) for including accessories and multiple transmitters", March 2010
- b) Federal Communications Commission Office of Engineering & Technology (FCC OET), "Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields; Additional Information for Evaluating Compliance of Mobile and Portable Devices with FCC Limits for Human Exposure to Radiofrequency Emissions", Supplement C (Edition 01-01) to Bulletin 65

Additional Documentation:

- c) DASY4/5 System Handbook

Methods Applied and Interpretation of Parameters:

- *Measurement Conditions:* Further details are available from the Validation Report at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated.
- *Antenna Parameters with TSL:* The dipole is mounted with the spacer to position its feed point exactly below the center marking of the flat phantom section, with the arms oriented parallel to the body axis.
- *Feed Point Impedance and Return Loss:* These parameters are measured with the dipole positioned under the liquid filled phantom. The impedance stated is transformed from the measurement at the SMA connector to the feed point. The Return Loss ensures low reflected power. No uncertainty required.
- *Electrical Delay:* One-way delay between the SMA connector and the antenna feed point. No uncertainty required.
- *SAR measured:* SAR measured at the stated antenna input power.
- *SAR normalized:* SAR as measured, normalized to an input power of 1 W at the antenna connector.
- *SAR for nominal TSL parameters:* The measured TSL parameters are used to calculate the nominal SAR result.

The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor $k=2$, which for a normal distribution corresponds to a coverage probability of approximately 95%.

Measurement Conditions

DASY system configuration, as far as not given on page 1.

DASY Version	DASY5	V52.8.5
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom V5.0	
Distance Dipole Center - TSL	10 mm	with Spacer
Zoom Scan Resolution	dx, dy = 4.0 mm, dz = 1.4 mm	Graded Ratio = 1.4 (Z direction)
Frequency	5200 MHz $\pm$ 1 MHz 5500 MHz $\pm$ 1 MHz 5800 MHz $\pm$ 1 MHz	

Head TSL parameters at 5200 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	36.0	4.66 mho/m
Measured Head TSL parameters	(22.0 $\pm$ 0.2) °C	34.7 $\pm$ 6 %	4.47 mho/m $\pm$ 6 %
Head TSL temperature change during test	< 0.5 °C	----	----

SAR result with Head TSL at 5200 MHz

SAR averaged over 1 cm ³ (1 g) of Head TSL	Condition	
SAR measured	100 mW input power	7.88 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	78.1 W/kg $\pm$ 19.9 % (k=2)

SAR averaged over 10 cm ³ (10 g) of Head TSL	condition	
SAR measured	100 mW input power	2.26 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	22.3 W/kg $\pm$ 19.5 % (k=2)

Head TSL parameters at 5500 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	35.6	4.96 mho/m
Measured Head TSL parameters	(22.0 $\pm$ 0.2) °C	34.2 $\pm$ 6 %	4.74 mho/m $\pm$ 6 %
Head TSL temperature change during test	< 0.5 °C	----	----

SAR result with Head TSL at 5500 MHz

SAR averaged over 1 cm ³ (1 g) of Head TSL	Condition	
SAR measured	100 mW input power	8.34 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	82.5 W / kg $\pm$ 19.9 % (k=2)

SAR averaged over 10 cm ³ (10 g) of Head TSL	condition	
SAR measured	100 mW input power	2.38 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	23.5 W/kg $\pm$ 19.5 % (k=2)

Head TSL parameters at 5800 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	35.3	5.27 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	33.9 ± 6 %	5.05 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C	----	----

SAR result with Head TSL at 5800 MHz

SAR averaged over 1 cm ³ (1 g) of Head TSL	Condition	
SAR measured	100 mW input power	7.78 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	77.0 W/kg ± 19.9 % (k=2)

SAR averaged over 10 cm ³ (10 g) of Head TSL	condition	
SAR measured	100 mW input power	2.22 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	21.9 W/kg ± 19.5 % (k=2)

Body TSL parameters at 5200 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	49.0	5.30 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	46.9 ± 6 %	5.36 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C	----	----

SAR result with Body TSL at 5200 MHz

SAR averaged over 1 cm ³ (1 g) of Body TSL	Condition	
SAR measured	100 mW input power	7.58 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	75.1 W/kg ± 19.9 % (k=2)

SAR averaged over 10 cm ³ (10 g) of Body TSL	condition	
SAR measured	100 mW input power	2.13 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	21.1 W/kg ± 19.5 % (k=2)

Body TSL parameters at 5500 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	48.6	5.65 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	46.3 ± 6 %	5.71 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C	----	----

SAR result with Body TSL at 5500 MHz

SAR averaged over 1 cm ³ (1 g) of Body TSL	Condition	
SAR measured	100 mW input power	7.98 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	79.0 W/kg ± 19.9 % (k=2)

SAR averaged over 10 cm ³ (10 g) of Body TSL	condition	
SAR measured	100 mW input power	2.23 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	22.0 W/kg ± 19.5 % (k=2)

Body TSL parameters at 5800 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	48.2	6.00 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	45.9 ± 6 %	6.12 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C	----	----

SAR result with Body TSL at 5800 MHz

SAR averaged over 1 cm ³ (1 g) of Body TSL	Condition	
SAR measured	100 mW input power	7.51 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	74.4 W/kg ± 19.9 % (k=2)

SAR averaged over 10 cm ³ (10 g) of Body TSL	condition	
SAR measured	100 mW input power	2.09 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	20.6 W/kg ± 19.5 % (k=2)

Appendix

Antenna Parameters with Head TSL at 5200 MHz

Impedance, transformed to feed point	52.7 Ω - 9.7 j Ω
Return Loss	- 20.2 dB

Antenna Parameters with Head TSL at 5500 MHz

Impedance, transformed to feed point	48.5 Ω - 0.8 j Ω
Return Loss	- 35.3 dB

Antenna Parameters with Head TSL at 5800 MHz

Impedance, transformed to feed point	57.1 Ω + 7.1 j Ω
Return Loss	- 20.6 dB

Antenna Parameters with Body TSL at 5200 MHz

Impedance, transformed to feed point	53.2 Ω - 9.1 j Ω
Return Loss	- 20.6 dB

Antenna Parameters with Body TSL at 5500 MHz

Impedance, transformed to feed point	48.7 Ω - 0.2 j Ω
Return Loss	- 37.3 dB

Antenna Parameters with Body TSL at 5800 MHz

Impedance, transformed to feed point	57.1 Ω + 8.7 j Ω
Return Loss	- 19.6 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.199 ns
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After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured.

The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals. On some of the dipoles, small end caps are added to the dipole arms in order to improve matching when loaded according to the position as explained in the "Measurement Conditions" paragraph. The SAR data are not affected by this change. The overall dipole length is still according to the Standard.

No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

Additional EUT Data

Manufactured by	SPEAG
Manufactured on	November 14, 2003

DASY5 Validation Report for Head TSL

Date: 20.02.2013

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 5GHz; Type: D5GHzV2; Serial: D5GHzV2 - SN: 1016

Communication System: CW; Frequency: 5200 MHz, Frequency: 5500 MHz, Frequency: 5800 MHz
Medium parameters used: $f = 5200$ MHz; $\sigma = 4.47$ S/m; $\epsilon_r = 34.7$; $\rho = 1000$ kg/m³, Medium parameters used: $f = 5500$ MHz; $\sigma = 4.74$ S/m; $\epsilon_r = 34.2$; $\rho = 1000$ kg/m³, Medium parameters used: $f = 5800$ MHz; $\sigma = 5.05$ S/m; $\epsilon_r = 33.9$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY52 Configuration:

- Probe: EX3DV4 - SN3503; ConvF(5.41, 5.41, 5.41); Calibrated: 28.12.2012, ConvF(4.91, 4.91, 4.91); Calibrated: 28.12.2012, ConvF(4.81, 4.81, 4.81); Calibrated: 28.12.2012;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 27.06.2012
- Phantom: Flat Phantom 5.0 (front); Type: QD000P50AA; Serial: 1001
- DASY52 52.8.5(1059); SEMCAD X 14.6.8(7028)

Dipole Calibration for Head Tissue/Pin=100mW, dist=10mm, f=5200 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 64.875 V/m; Power Drift = 0.06 dB

Peak SAR (extrapolated) = 29.2 W/kg

SAR(1 g) = 7.88 W/kg; SAR(10 g) = 2.26 W/kg

Maximum value of SAR (measured) = 18.5 W/kg

Dipole Calibration for Head Tissue/Pin=100mW, dist=10mm, f=5500 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 65.120 V/m; Power Drift = 0.05 dB

Peak SAR (extrapolated) = 33.0 W/kg

SAR(1 g) = 8.34 W/kg; SAR(10 g) = 2.38 W/kg

Maximum value of SAR (measured) = 20.1 W/kg

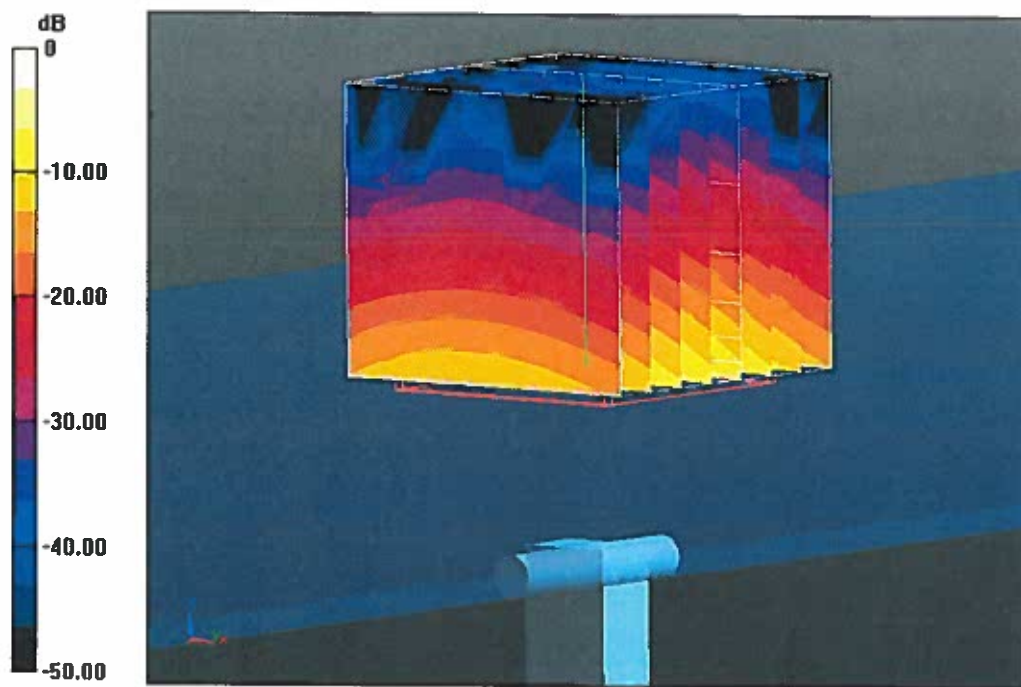
Dipole Calibration for Head Tissue/Pin=100mW, dist=10mm, f=5800 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 61.682 V/m; Power Drift = -0.02 dB

Peak SAR (extrapolated) = 32.4 W/kg

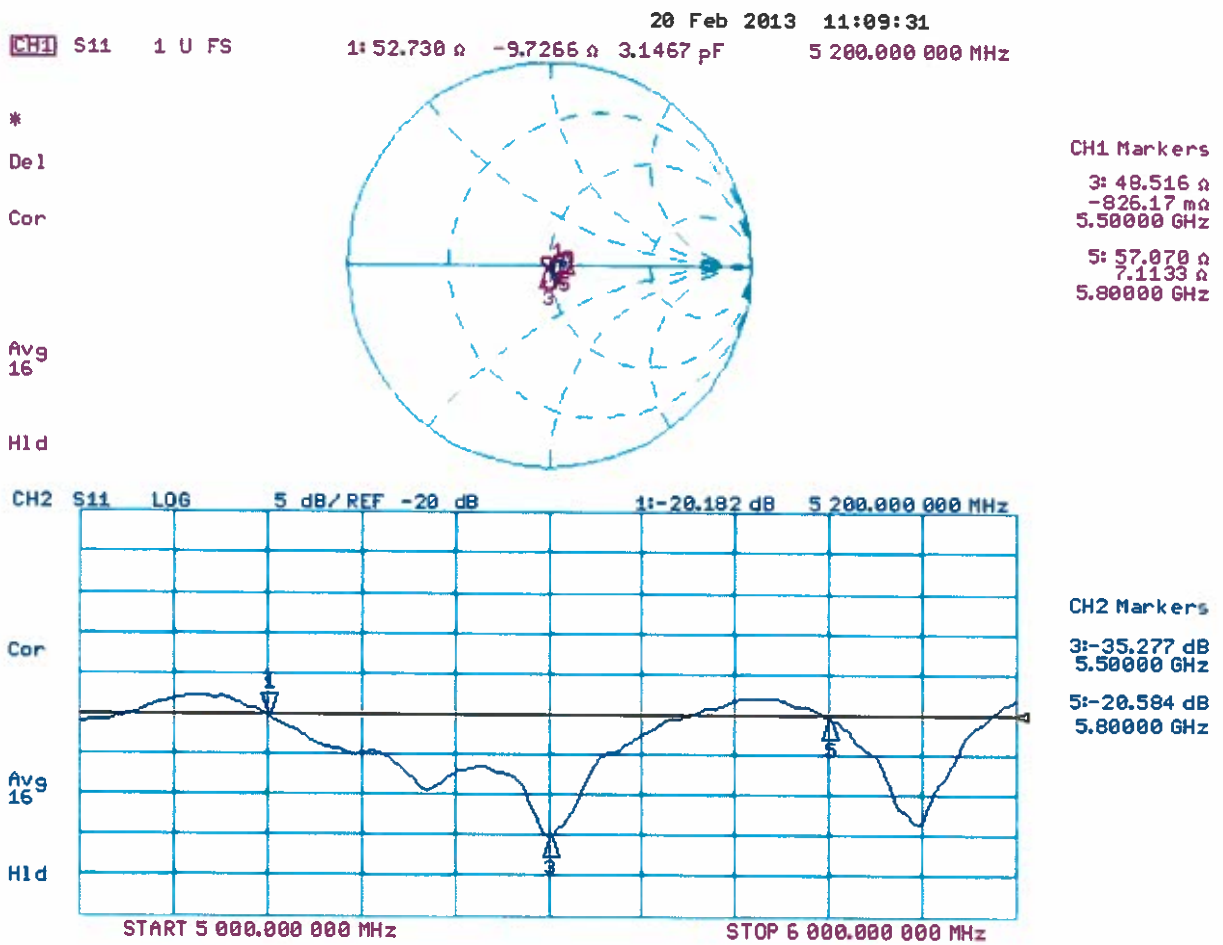
SAR(1 g) = 7.78 W/kg; SAR(10 g) = 2.22 W/kg

Maximum value of SAR (measured) = 19.1 W/kg



0 dB = 19.1 W/kg = 12.81 dBW/kg

Impedance Measurement Plot for Head TSL



DASY5 Validation Report for Body TSL

Date: 14.02.2013

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 5GHz; Type: D5GHzV2; Serial: D5GHzV2 - SN: 1016

Communication System: CW; Frequency: 5200 MHz, Frequency: 5500 MHz, Frequency: 5800 MHz
Medium parameters used: $f = 5200$ MHz; $\sigma = 5.36$ S/m; $\epsilon_r = 46.9$; $\rho = 1000$ kg/m³, Medium parameters used: $f = 5500$ MHz; $\sigma = 5.71$ S/m; $\epsilon_r = 46.3$; $\rho = 1000$ kg/m³, Medium parameters used: $f = 5800$ MHz; $\sigma = 6.12$ S/m; $\epsilon_r = 45.9$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY52 Configuration:

- Probe: EX3DV4 - SN3503; ConvF(4.91, 4.91, 4.91); Calibrated: 28.12.2012, ConvF(4.43, 4.43, 4.43); Calibrated: 28.12.2012, ConvF(4.38, 4.38, 4.38); Calibrated: 28.12.2012;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 27.06.2012
- Phantom: Flat Phantom 5.0 (back); Type: QD000P50AA; Serial: 1002
- DASY52 52.8.5(1059); SEMCAD X 14.6.8(7028)

Dipole Calibration for Body Tissue/Pin=100mW, dist=10mm, f=5200 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 60.072 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 30.6 W/kg

SAR(1 g) = 7.58 W/kg; SAR(10 g) = 2.13 W/kg

Maximum value of SAR (measured) = 18.0 W/kg

Dipole Calibration for Body Tissue/Pin=100mW, dist=10mm, f=5500 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 59.550 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 35.1 W/kg

SAR(1 g) = 7.98 W/kg; SAR(10 g) = 2.23 W/kg

Maximum value of SAR (measured) = 19.5 W/kg

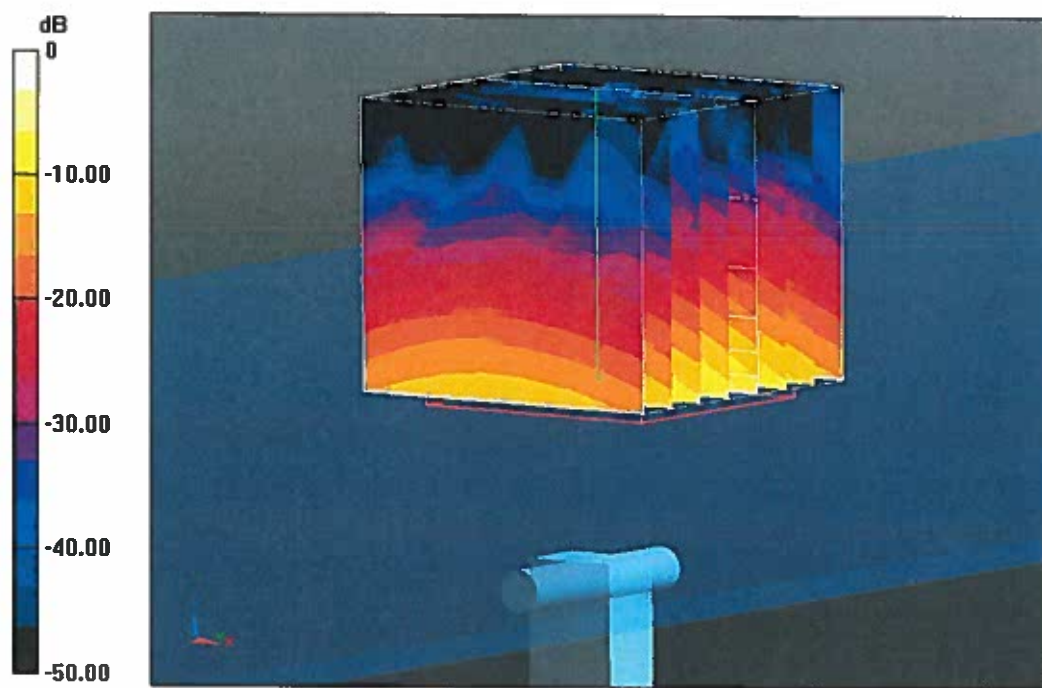
Dipole Calibration for Body Tissue/Pin=100mW, dist=10mm, f=5800 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 56.431 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 35.6 W/kg

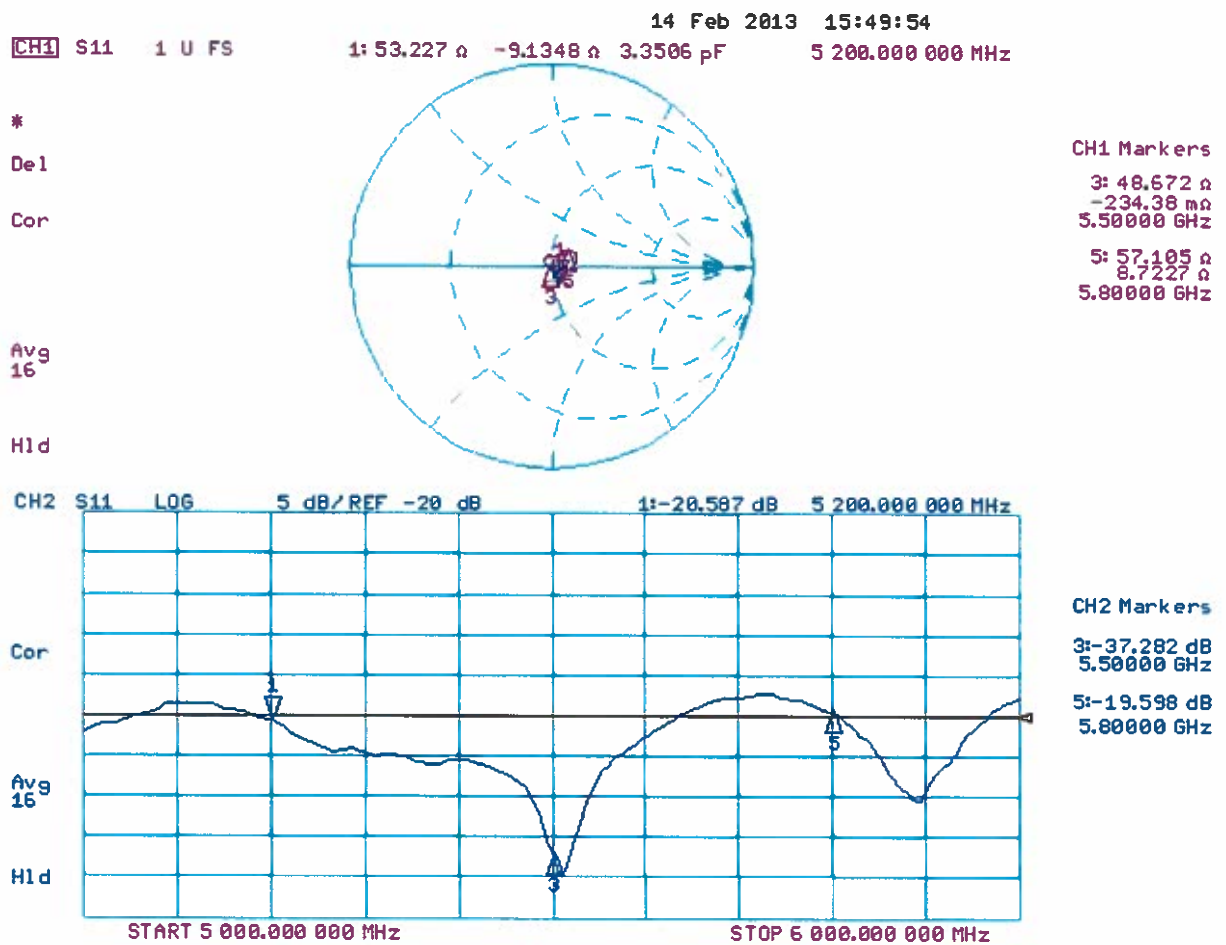
SAR(1 g) = 7.51 W/kg; SAR(10 g) = 2.09 W/kg

Maximum value of SAR (measured) = 18.8 W/kg



0 dB = 18.8 W/kg = 12.74 dBW/kg

Impedance Measurement Plot for Body TSL



Appendix 2. Measurement Methods

A.2.1. Evaluation Procedure

The Specific Absorption Rate (SAR) evaluation was performed in the following manner:

- a) (i) The evaluation was performed in an applicable area of the phantom depending on the type of device being tested. For devices worn about the ear during normal operation, both the left and right ear positions were evaluated at the centre frequency of the band at maximum power. The side, which produced the greatest SAR, determined which side of the phantom would be used for the entire evaluation. The positioning of the head worn device relative to the phantom was dictated by the test specification identified in section 3.1 of this report.

(ii) For body worn devices or devices which can be operated within 20 cm of the body, the flat section of the SAM phantom was used where the size of the device(s) is normal. For bigger devices and base station the 2mm Oval phantom is used for evaluation. The type of device being evaluated dictated the distance of the EUT to the outer surface of the phantom flat section.
- b) The SAR was determined by a pre-defined procedure within the DASY4 software. The exposed region of the phantom was scanned near the inner surface with a grid spacing of 20mm x 20mm or appropriate resolution.
- c) A 5x5x7 matrix for measurement < 2.0 GHz, 7x7x7 matrix for measurement 2.0 GHz to 3.0 GHz, and 7x7x12 for > 5.0 GHz was performed around the greatest spatial SAR distribution found during the area scan of the applicable exposed region. SAR values were then calculated using a 3-D spline interpolation algorithm and averaged over spatial volumes of 1 and 10 grams.
- d) If the EUT had any appreciable drift over the course of the evaluation, then the EUT was re-evaluated. Any unusual anomalies over the course of the test also warranted a re-evaluation.

A.2.2. Specific Absorption Rate (SAR) Measurements to OET Bulletin 65 Supplement C: (2001-01)

Evaluating Compliance with FCC Guidelines for Human Exposure to Radio Frequency Electromagnetic Fields

SAR measurements were performed in accordance with Appendix D of the standard FCC OET Bulletin 65 Supplement C: 2001, IEEE 1528 and FCC KDB procedures, against appropriate limits for each measurement position in accordance with the standard. In some cases the FCC was contacted using a PBA or KDB process to ensure test is performed correctly.

The test was performed in a shielded enclosure with the temperature controlled to remain between +18.0°C and +25.0°C. The tissue equivalent material fluid temperature was controlled to give a maximum variation of $\pm 2.0^{\circ}\text{C}$

Prior to any SAR measurements on the EUT, system Check and material dielectric property measurements were conducted. In the absence of a detailed procedure within the specification, system Check and material dielectric property measurements were performed in accordance with Appendix C and Appendix D of FCC OET Bulletin 65 Supplement C: 2001 and FCC KDB publication 865664 D01.

Following the successful system Check and material dielectric property measurements, a SAR versus time sweep shall be performed within 10 mm of the phantom inner surface. If the EUT power output is stable after three minutes then the measurement probe will perform a coarse surface level scan at each test position in order to ascertain the location of the maximum local SAR level. Once this area had been established, a 5x5x7 cube of 175 points for frequency below 2.0 GHz, above 2.0GHz up to 3.0 GHz 7x7x7 cube of 343 points and a 7x7x12 cube of 588 points for frequency 5.0 GHz and above will be centred at the area of concern. Extrapolation and interpolation will then be carried out on the 27g of tissue and the highest averaged SAR over a 1g cube determined.

Once the maximum interpolated SAR measurement is complete; the coarse scan is visually assessed to check for secondary peaks within 50% of the maximum SAR level. If there are any further SAR measurements required, extra 5x5x7 or 7x7x7 or 7x7x12 cubes shall be centred on each of these extra local SAR maxima.

At the end of each position test case a second time sweep shall be performed to check whether the EUT has remained stable throughout the test.

Appendix 3. SAR Distribution Scans

This appendix contains SAR distribution scans which are not included in the total number of pages for this report.

Scan Reference Number	Title
SCN/92490/001	Touch Left GSM CH190
SCN/92490/002	Tilt Left GSM CH190
SCN/92490/003	Touch Right GSM CH190
SCN/92490/004	Tilt Right GSM CH190
SCN/92490/005	Touch Right GSM CH128
SCN/92490/006	Touch Right GSM CH251
SCN/92490/007	Touch Right Antenna Extended GSM CH190
SCN/92490/008	Front of EUT Facing Phantom GPRS CH190
SCN/92490/009	Front of EUT Facing Phantom GPRS CH128
SCN/92490/010	Front of EUT Facing Phantom GPRS CH251
SCN/92490/011	Back of EUT Facing Phantom GPRS CH190
SCN/92490/012	Back of EUT Facing Phantom GPRS CH128
SCN/92490/013	Back of EUT Facing Phantom GPRS CH251
SCN/92490/014	Left Hand Side of EUT Facing Phantom GPRS CH190
SCN/92490/015	Right Hand Side of EUT Facing Phantom GPRS CH190
SCN/92490/016	Bottom Hand Side of EUT Facing Phantom GPRS CH190
SCN/92490/017	Back of EUT Antenna Extended Facing Phantom GPRS CH128
SCN/92490/018	Front of EUT Facing Phantom at 15mm GSM CH128
SCN/92490/019	Back of EUT Facing Phantom at 15mm GSM CH128
SCN/92490/020	Back of EUT Facing Phantom at 15mm GSM CH190
SCN/92490/021	Back of EUT Facing Phantom at 15mm GSM CH251
SCN/92490/022	Back of EUT Antenna Extended Facing Phantom at 15mm GSM CH128
SCN/92490/023	Touch Left PCS CH661
SCN/92490/024	Tilt Left PCS CH661
SCN/92490/025	Touch Right PCS CH661
SCN/92490/026	Tilt Right PCS CH661
SCN/92490/027	Touch Right PCS CH512
SCN/92490/028	Touch Right PCS CH810
SCN/92490/029	Touch Right Antenna Extended PCS CH810
SCN/92490/030	Front of EUT Facing Phantom GPRS CH661
SCN/92490/031	Back of EUT Facing Phantom GPRS CH661
SCN/92490/032	Back of EUT Facing Phantom GPRS CH512
SCN/92490/033	Back of EUT Facing Phantom GPRS CH810

SAR Distribution Scans (Continued):

Scan Reference Number	Title
SCN/92490/034	Left Hand Side of EUT Facing Phantom GPRS CH661
SCN/92490/035	Right Hand Side of EUT Facing Phantom GPRS CH661
SCN/92490/036	Bottom of EUT Facing Phantom GPRS CH661
SCN/92490/037	Bottom of EUT Facing Phantom GPRS CH512
SCN/92490/038	Bottom of EUT Facing Phantom GPRS CH810
SCN/92490/039	Front of EUT Facing Phantom at 15mm PCS CH810
SCN/92490/040	Back of EUT Facing Phantom at 15mm PCS CH810
SCN/92490/041	Back of EUT Antenna Extended Facing Phantom at 15mm PCS CH810
SCN/92490/042	Touch Left UMTS FDD2 CH9400
SCN/92490/043	Tilt Left UMTS FDD2 CH9400
SCN/92490/044	Touch Right UMTS FDD2 CH9400
SCN/92490/045	Tilt Right UMTS FDD2 CH9400
SCN/92490/046	Touch Right UMTS FDD2 CH9262
SCN/92490/047	Touch Right UMTS FDD2 CH9538
SCN/92490/048	Touch Right Antenna Extended UMTS FDD2 CH9538
SCN/92490/049	Front of EUT Facing Phantom UMTS FDD 2 CH9400
SCN/92490/050	Back of EUT Facing Phantom UMTS FDD 2 CH9400
SCN/92490/051	Left Side of EUT Facing Phantom UMTS FDD 2 CH9400
SCN/92490/052	Right Side of EUT Facing Phantom UMTS FDD 2 CH9400
SCN/92490/053	Bottom of EUT Facing Phantom UMTS FDD 2 CH9400
SCN/92490/054	Bottom of EUT Facing Phantom UMTS FDD 2 CH9262
SCN/92490/055	Bottom of EUT Facing Phantom UMTS FDD 2 CH9538
SCN/92490/056	Front of EUT Facing Phantom at 15mm UMTS FDD 2 CH9538
SCN/92490/057	Back of EUT Facing Phantom at 15mm UMTS FDD 2 CH9538
SCN/92490/058	Back of EUT Antenna Extended Facing Phantom at 15mm UMTS FDD 2 CH9538
SCN/92490/059	Touch Left UMTS FDD 5 CH4183
SCN/92490/060	Tilt Left UMTS FDD 5 CH4183
SCN/92490/061	Touch Right UMTS FDD 5 CH4183
SCN/92490/062	Tilt Right UMTS FDD 5 CH4183
SCN/92490/063	Touch Left UMTS FDD 5 CH4132
SCN/92490/064	Touch Left UMTS FDD 5 CH4233
SCN/92490/065	Touch Left Antenna Extended UMTS FDD CH4233
SCN/92490/066	Front of EUT Facing Phantom UMTS FDD 5 CH4183
SCN/92490/067	Back of EUT Facing Phantom UMTS FDD 5 CH4183
SCN/92490/068	Back of EUT Facing Phantom UMTS FDD 5 CH4132
SCN/92490/069	Back of EUT Facing Phantom UMTS FDD 5 CH4233

SAR Distribution Scans (Continued):

Scan Reference Number	Title
SCN/92490/070	Left Hand Side of EUT Facing Phantom UMTS FDD 5 CH4183
SCN/92490/071	Right Hand Side of EUT Facing Phantom UMTS FDD 5 CH4183
SCN/92490/072	Bottom of EUT Facing Phantom UMTS FDD 5 CH4183
SCN/92490/073	Back of EUT Antenna Extended Facing Phantom UMTS FDD 5 CH4132
SCN/92490/074	Front of EUT Facing Phantom at 15mm UMTS FDD 5 CH4132
SCN/92490/075	Back of EUT Facing Phantom at 15mm UMTS FDD 5 CH4132
SCN/92490/076	Back of EUT Antenna Extended Facing Phantom at 15mm UMTS FDD 5 CH4132
SCN/92490/077	Touch Left WiFi 802.11b 1Mbps CH6
SCN/92490/078	Tilt Left WiFi 802.11b 1Mbps CH6
SCN/92490/079	Touch Right WiFi 802.11b 1Mbps CH6
SCN/92490/080	Tilt Right WiFi 802.11b 1Mbps CH6
SCN/92490/081	Touch Right WiFi 802.11b 1Mbps CH1
SCN/92490/082	Touch Right WiFi 802.11b 1Mbps CH11
SCN/92490/083	Touch Right Antenna Extended WiFi 802.11b 1Mbps CH6
SCN/92490/084	Front of EUT Facing Phantom 802.11b 1Mbps CH6
SCN/92490/085	Back of EUT Facing Phantom 802.11b 1Mbps CH6
SCN/92490/086	Left Hand Side of EUT Facing Phantom 802.11b 1Mbps CH6
SCN/92490/087	Top of EUT Facing Phantom 802.11b 1Mbps CH6
SCN/92490/088	Front of EUT Facing Phantom 802.11b 1Mbps CH1
SCN/92490/089	Front of EUT Facing Phantom 802.11b 1Mbps CH11
SCN/92490/090	Front of EUT Facing Phantom with Antenna Extended 802.11b 1Mbps CH1
SCN/92490/091	Front of EUT Facing Phantom at 15mm Separation 802.11b 1Mbps CH6
SCN/92490/092	Back of EUT Facing Phantom at 15mm Separation 802.11b 1Mbps CH6
SCN/92490/093	Front of EUT Facing Phantom at 15mm Separation 802.11b 1Mbps CH1
SCN/92490/094	Front of EUT Facing Phantom at 15mm Separation 802.11b 1Mbps CH11
SCN/92490/095	Front of EUT Facing Phantom With Antenna Extended at 15mm Separation 802.11b 1Mbps CH11
SCN/92490/096	Touch Left WiFi 802.11a 6Mbps CH48
SCN/92490/097	Touch Left WiFi 802.11a 6Mbps CH48
SCN/92490/098	Touch Right WiFi 802.11a 6Mbps CH48
SCN/92490/099	Tilt Right WiFi 802.11a 6Mbps CH48
SCN/92490/100	Tilt Right WiFi 802.11a 6Mbps CH52
SCN/92490/101	Tilt Right WiFi 802.11a 6Mbps CH116

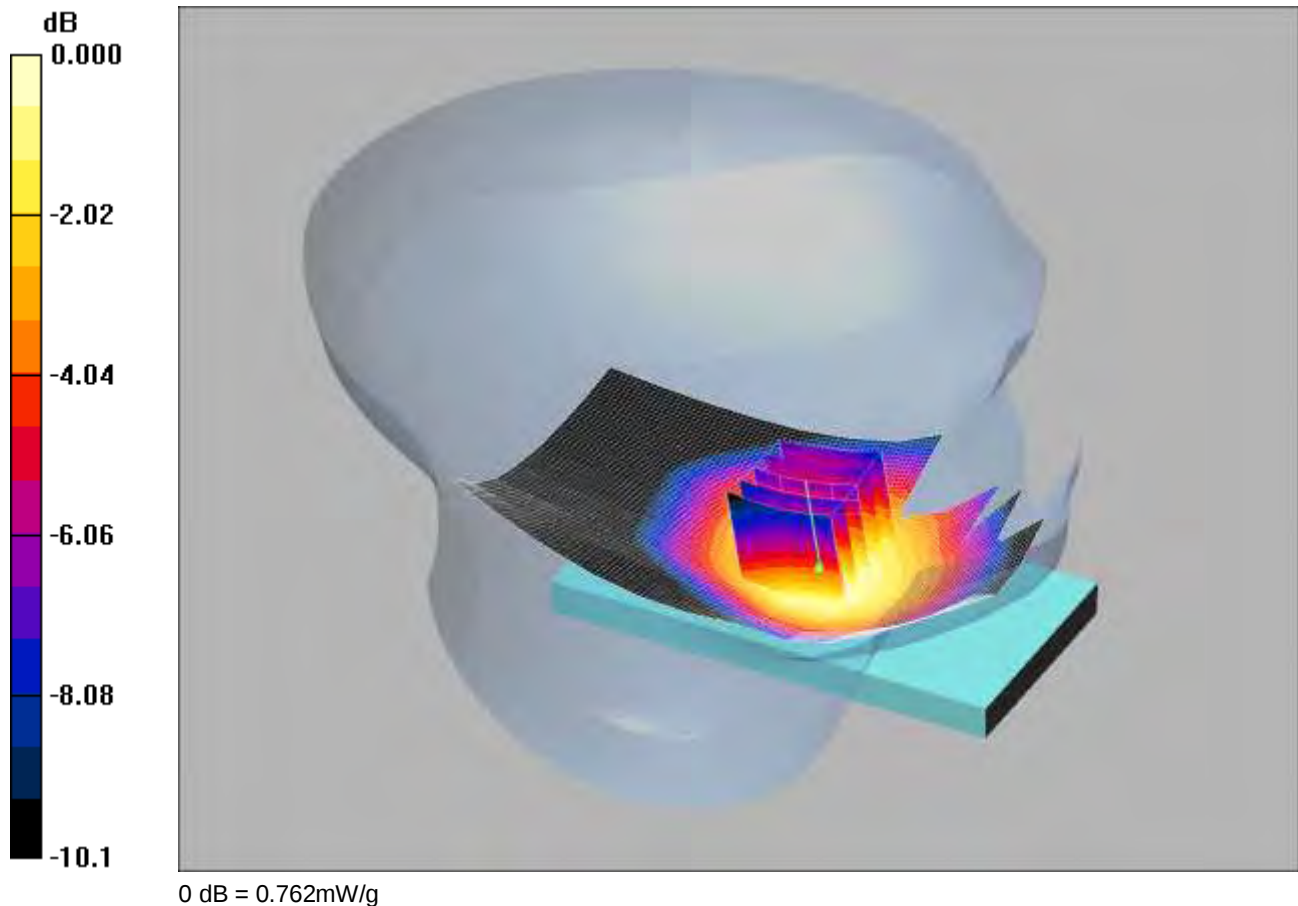
SAR Distribution Scans (Continued):

Scan Reference Number	Title
SCN/92490/102	Tilt Right WiFi 802.11a 6Mbps CH104
SCN/92490/103	Tilt Right WiFi 802.11a 6Mbps CH124
SCN/92490/104	Tilt Right WiFi 802.11a 6Mbps CH136
SCN/92490/105	Tilt Right WiFi 802.11a 6Mbps CH149
SCN/92490/106	Tilt Right Antenna Extended WiFi 802.11a 6Mbps CH104
SCN/92490/107	Front of EUT Facing Phantom WiFi 802.11a 6Mbps CH48
SCN/92490/108	Back of EUT Facing Phantom WiFi 802.11a 6Mbps CH48
SCN/92490/109	Left Hand Side of EUT Facing Phantom WiFi 802.11a 6Mbps CH48
SCN/92490/110	Top of EUT Facing Phantom WiFi 802.11a 6Mbps CH48
SCN/92490/111	Top of EUT Facing Phantom WiFi 802.11a 6Mbps CH52
SCN/92490/112	Top of EUT Facing Phantom WiFi 802.11a 6Mbps CH116
SCN/92490/113	Top of EUT Facing Phantom WiFi 802.11a 6Mbps CH149
SCN/92490/114	Front of EUT Facing Phantom WiFi 802.11a 6Mbps at 15mm CH48
SCN/92490/115	Back of EUT Facing Phantom WiFi 802.11a 6Mbps at 15mm CH48
SCN/92490/116	Back of EUT Facing Phantom WiFi 802.11a 6Mbps at 15mm with Extended Antenna CH48
SCN/92490/117	System Performance Check 900MHz Head 13 03 13
SCN/92490/118	System Performance Check 900MHz Body 14 03 13
SCN/92490/119	System Performance Check 900MHz Body 15 03 13
SCN/92490/120	System Performance Check 900MHz Body 18 03 13
SCN/92490/121	System Performance Check 1900MHz Head 18 03 13
SCN/92490/122	System Performance Check 1900MHz Head 19 03 13
SCN/92490/123	System Performance Check 1900MHz Body 19 03 13
SCN/92490/124	System Performance Check 1900MHz Body 20 03 13
SCN/92490/125	System Performance Check 2450MHz Head 02 04 13
SCN/92490/126	System Performance Check 2450MHz Body 04 04 13
SCN/92490/127	System Performance Check 2450MHz Body 08 05 13
SCN/92490/128	System Performance Check 2450MHz Body 09 05 13
SCN/92490/129	System Performance Check 5200MHz Head 25 03 13
SCN/92490/130	System Performance Check 5500MHz Head 25 03 13
SCN/92490/131	System Performance Check 5800MHz Head 25 03 13
SCN/92490/132	System Performance Check 5200MHz Body 08 04 13
SCN/92490/133	System Performance Check 5200MHz Body 09 04 13
SCN/92490/134	System Performance Check 5500MHz Body 09 04 13
SCN/92490/135	System Performance Check 5800MHz Body 09 04 13

SCN/92490/001: Touch Left GSM CH190

Date: 13/03/2013

DUT: Sony Gaga Anna; Type: Gaga Anna; Serial: PM-0400-BV



Communication System: GSM 850 MHz; Frequency: 836.6 MHz; Duty Cycle: 1:8.3

Medium: 900 MHz HSL Medium parameters used (interpolated): $f = 836.6$ MHz; $\sigma = 0.934$ mho/m; $\epsilon_r = 41.7$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(6.33, 6.33, 6.33); Calibrated: 11/05/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn431; Calibrated: 20/09/2012
- Phantom: SAM 12b (Site 56); Type: SAM 4.0; Serial: TP:1020
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Touch Left - Middle/Area Scan (71x121x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.737 mW/g

Touch Left - Middle/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 7.72 V/m; Power Drift = 0.084 dB

Peak SAR (extrapolated) = 0.939 W/kg

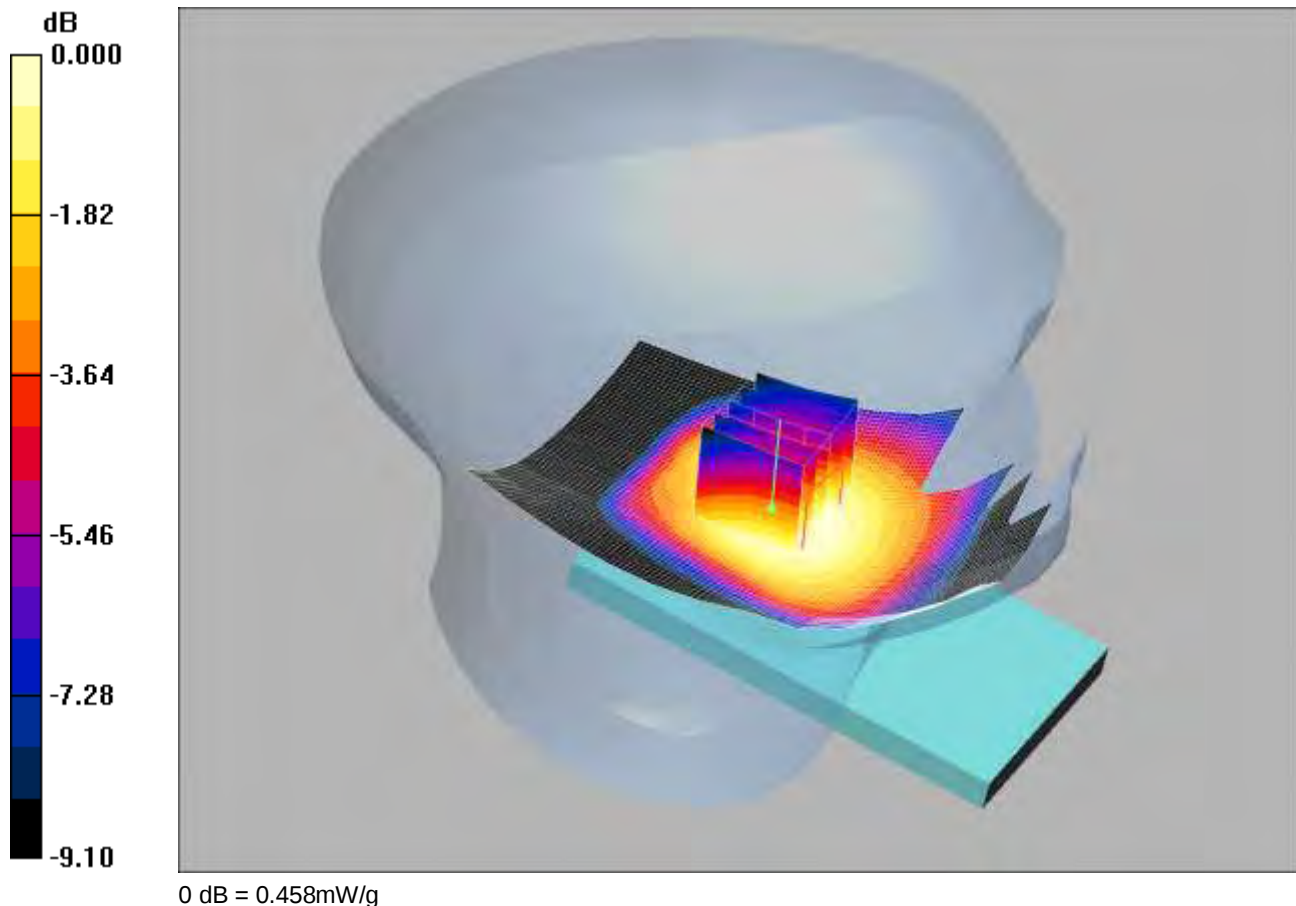
SAR(1 g) = 0.714 mW/g; SAR(10 g) = 0.527 mW/g

Maximum value of SAR (measured) = 0.762 mW/g

SCN/92490/002: Tilt Left GSM CH190

Date: 13/03/2013

DUT: Sony Gaga Anna; Type: Gaga Anna; Serial: PM-0400-BV



Communication System: GSM 850 MHz; Frequency: 836.6 MHz; Duty Cycle: 1:8.3

Medium: 900 MHz HSL Medium parameters used (interpolated): $f = 836.6$ MHz; $\sigma = 0.934$ mho/m; $\epsilon_r = 41.7$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(6.33, 6.33, 6.33); Calibrated: 11/05/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn431; Calibrated: 20/09/2012
- Phantom: SAM 12b (Site 56); Type: SAM 4.0; Serial: TP:1020
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Tilt Left - Middle/Area Scan (71x121x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.464 mW/g

Tilt Left - Middle/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 12.6 V/m; Power Drift = -0.009 dB

Peak SAR (extrapolated) = 0.529 W/kg

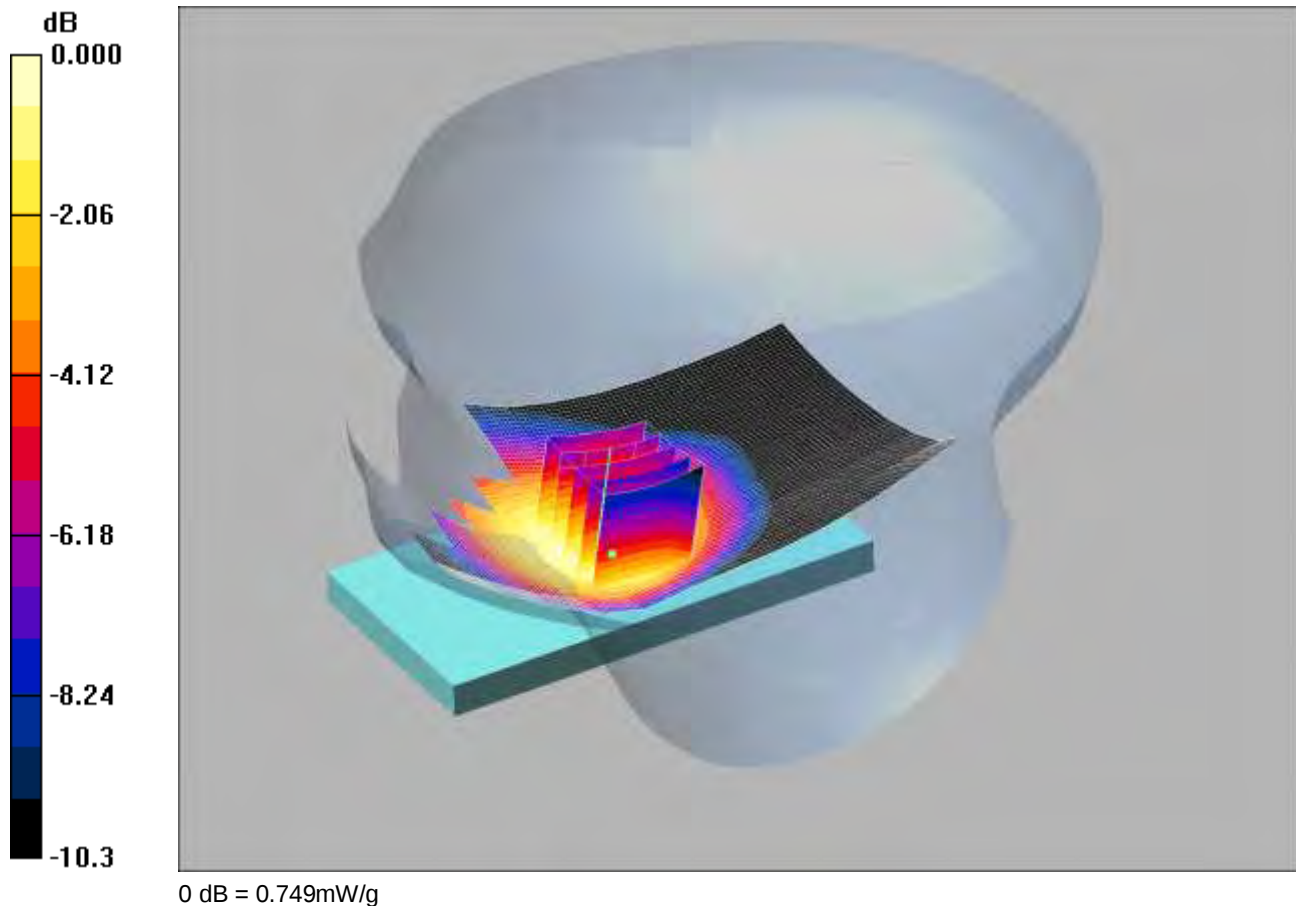
SAR(1 g) = 0.435 mW/g; SAR(10 g) = 0.335 mW/g

Maximum value of SAR (measured) = 0.458 mW/g

SCN/92490/003: Touch Right GSM CH190

Date: 13/03/2013

DUT: Sony Gaga Anna; Type: Gaga Anna; Serial: PM-0400-BV



Communication System: GSM 850 MHz; Frequency: 836.6 MHz; Duty Cycle: 1:8.3

Medium: 900 MHz HSL Medium parameters used (interpolated): $f = 836.6$ MHz; $\sigma = 0.934$ mho/m; $\epsilon_r = 41.7$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(6.33, 6.33, 6.33); Calibrated: 11/05/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn431; Calibrated: 20/09/2012
- Phantom: SAM 12b (Site 56); Type: SAM 4.0; Serial: TP:1020
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Touch Right - Middle/Area Scan (71x121x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.756 mW/g

Touch Right - Middle/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 6.05 V/m; Power Drift = 0.097 dB

Peak SAR (extrapolated) = 0.911 W/kg

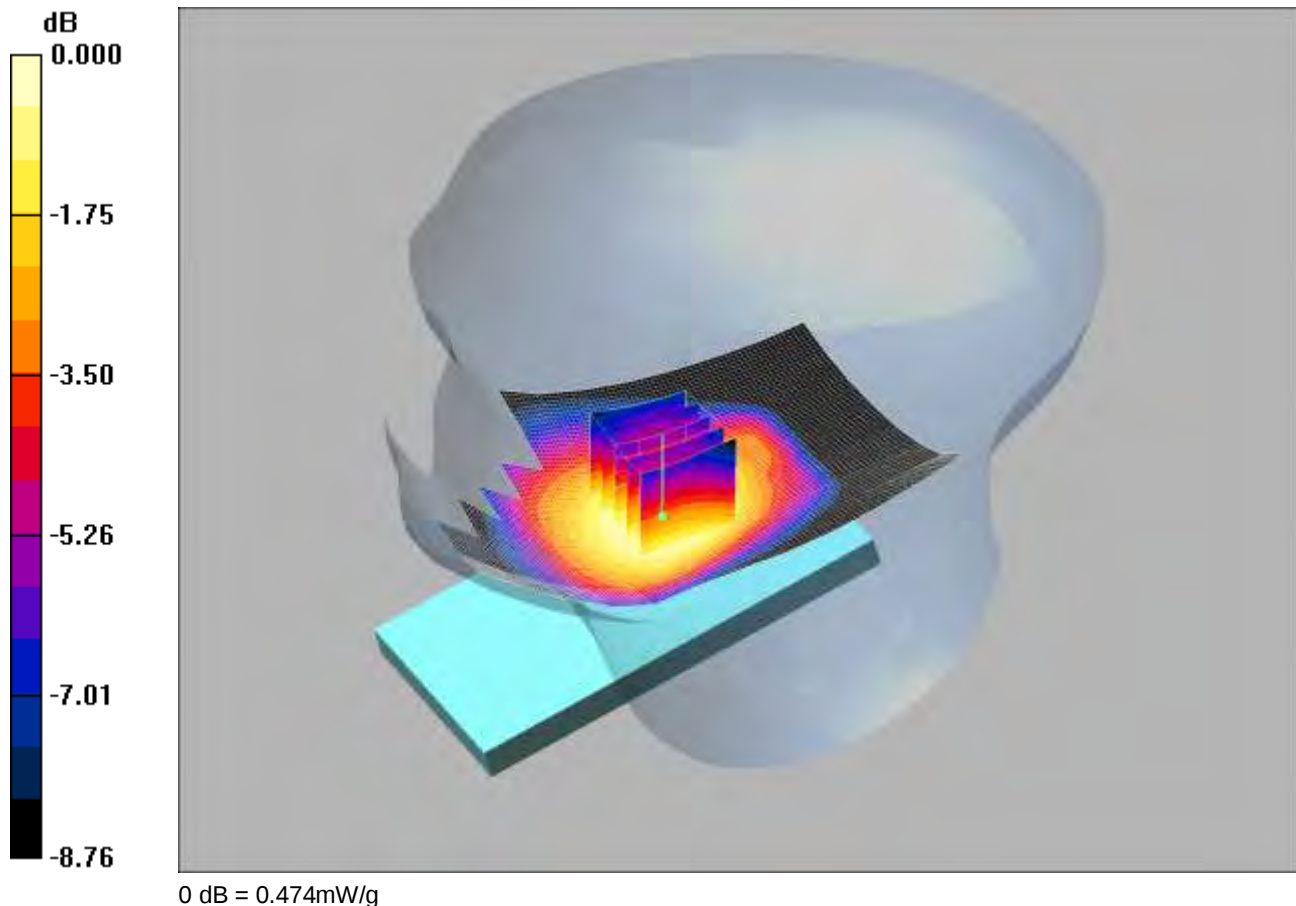
SAR(1 g) = 0.718 mW/g; SAR(10 g) = 0.543 mW/g

Maximum value of SAR (measured) = 0.749 mW/g

SCN/92490/004: Tilt Right GSM CH190

Date: 13/03/2013

DUT: Sony Gaga Anna; Type: Gaga Anna; Serial: PM-0400-BV



Communication System: GSM 850 MHz; Frequency: 836.6 MHz; Duty Cycle: 1:8.3

Medium: 900 MHz HSL Medium parameters used (interpolated): $f = 836.6$ MHz; $\sigma = 0.934$ mho/m; $\epsilon_r = 41.7$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(6.33, 6.33, 6.33); Calibrated: 11/05/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn431; Calibrated: 20/09/2012
- Phantom: SAM 12b (Site 56); Type: SAM 4.0; Serial: TP:1020
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Tilt Right - Middle/Area Scan (71x121x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.471 mW/g

Tilt Right - Middle/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 11.6 V/m; Power Drift = -0.013 dB

Peak SAR (extrapolated) = 0.532 W/kg

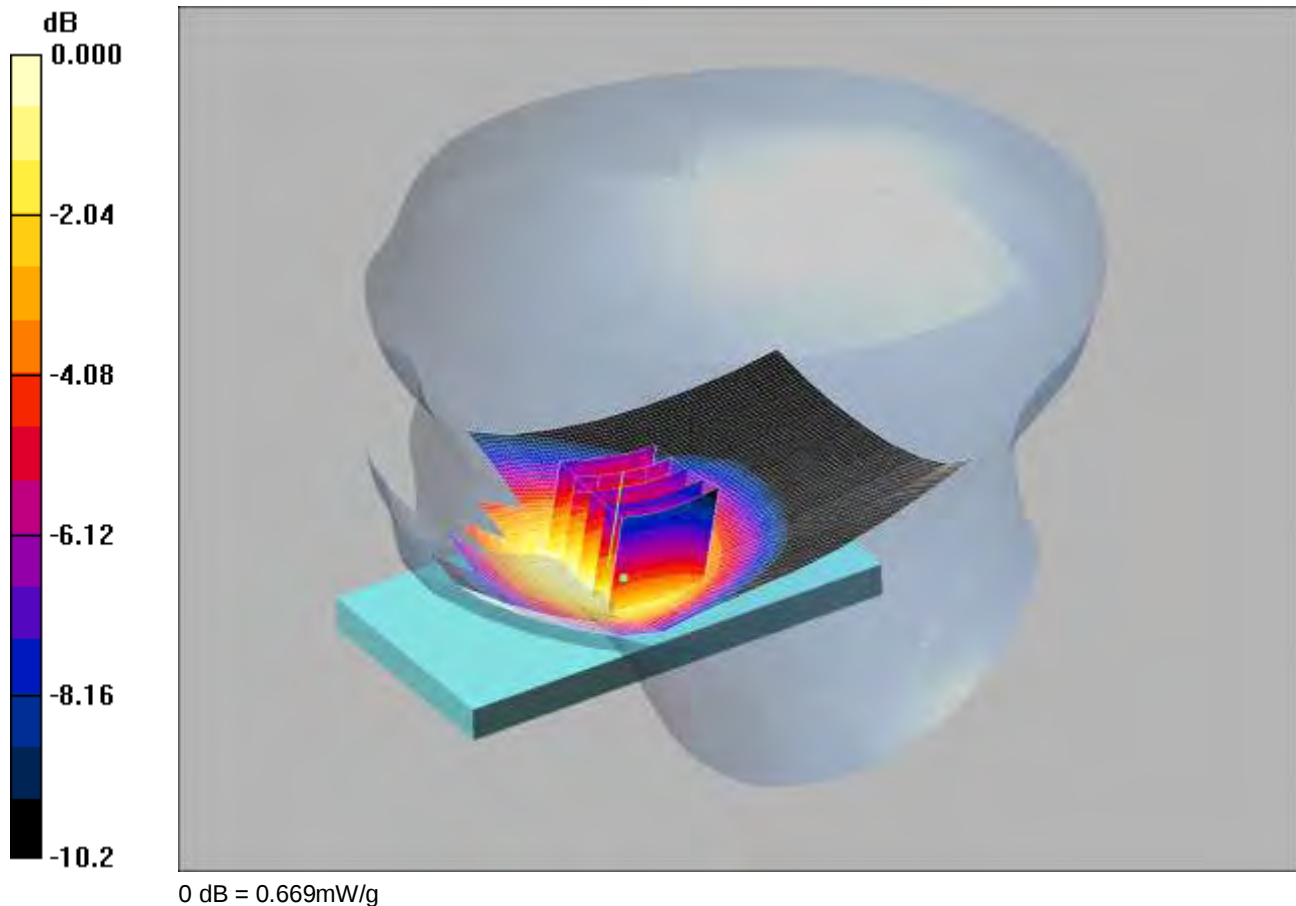
SAR(1 g) = 0.453 mW/g; SAR(10 g) = 0.350 mW/g

Maximum value of SAR (measured) = 0.474 mW/g

SCN/92490/005: Touch Right GSM CH128

Date: 13/03/2013

DUT: Sony Gaga Anna; Type: Gaga Anna; Serial: PM-0400-BV



Communication System: GSM 850 MHz; Frequency: 836.6 MHz; Duty Cycle: 1:8.3

Medium: 900 MHz HSL Medium parameters used (interpolated): $f = 836.6$ MHz; $\sigma = 0.934$ mho/m; $\epsilon_r = 41.7$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(6.33, 6.33, 6.33); Calibrated: 11/05/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn431; Calibrated: 20/09/2012
- Phantom: SAM 12b (Site 56); Type: SAM 4.0; Serial: TP:1020
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Touch Right - Low/Area Scan (71x121x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.682 mW/g

Touch Right - Low/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 6.99 V/m; Power Drift = -0.082 dB

Peak SAR (extrapolated) = 0.791 W/kg

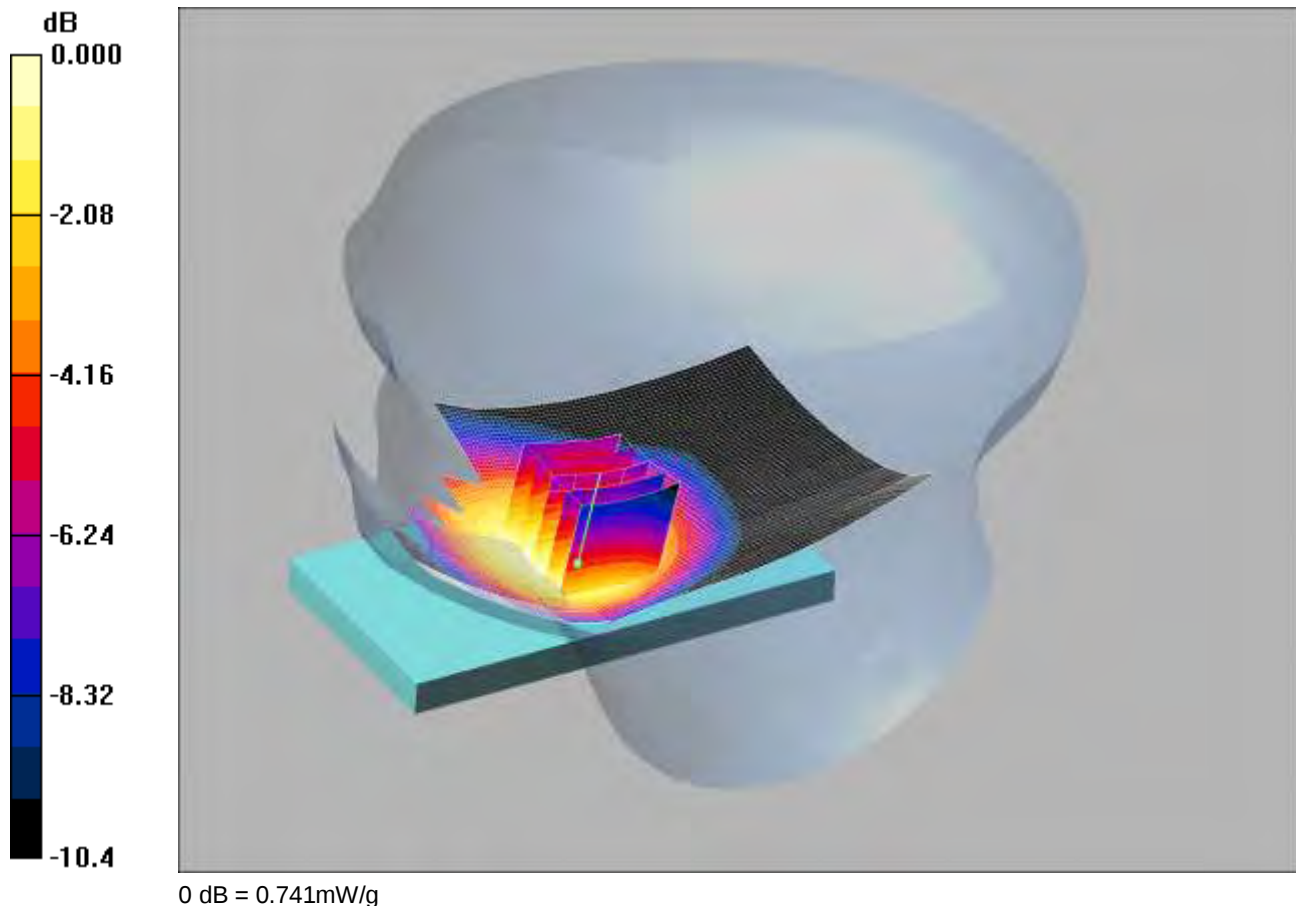
SAR(1 g) = 0.636 mW/g; SAR(10 g) = 0.481 mW/g

Maximum value of SAR (measured) = 0.669 mW/g

SCN/92490/006: Touch Right GSM CH251

Date: 13/03/2013

DUT: Sony Gaga Anna; Type: Gaga Anna; Serial: PM-0400-BV



Communication System: GSM 850 MHz; Frequency: 848.8 MHz; Duty Cycle: 1:8.3

Medium: 900 MHz HSL Medium parameters used (interpolated): $f = 848.8$ MHz; $\sigma = 0.943$ mho/m; $\epsilon_r = 41.6$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(6.33, 6.33, 6.33); Calibrated: 11/05/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn431; Calibrated: 20/09/2012
- Phantom: SAM 12b (Site 56); Type: SAM 4.0; Serial: TP:1020
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Touch Right - High/Area Scan (71x121x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.768 mW/g

Touch Right - High/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 6.67 V/m; Power Drift = 0.109 dB

Peak SAR (extrapolated) = 0.910 W/kg

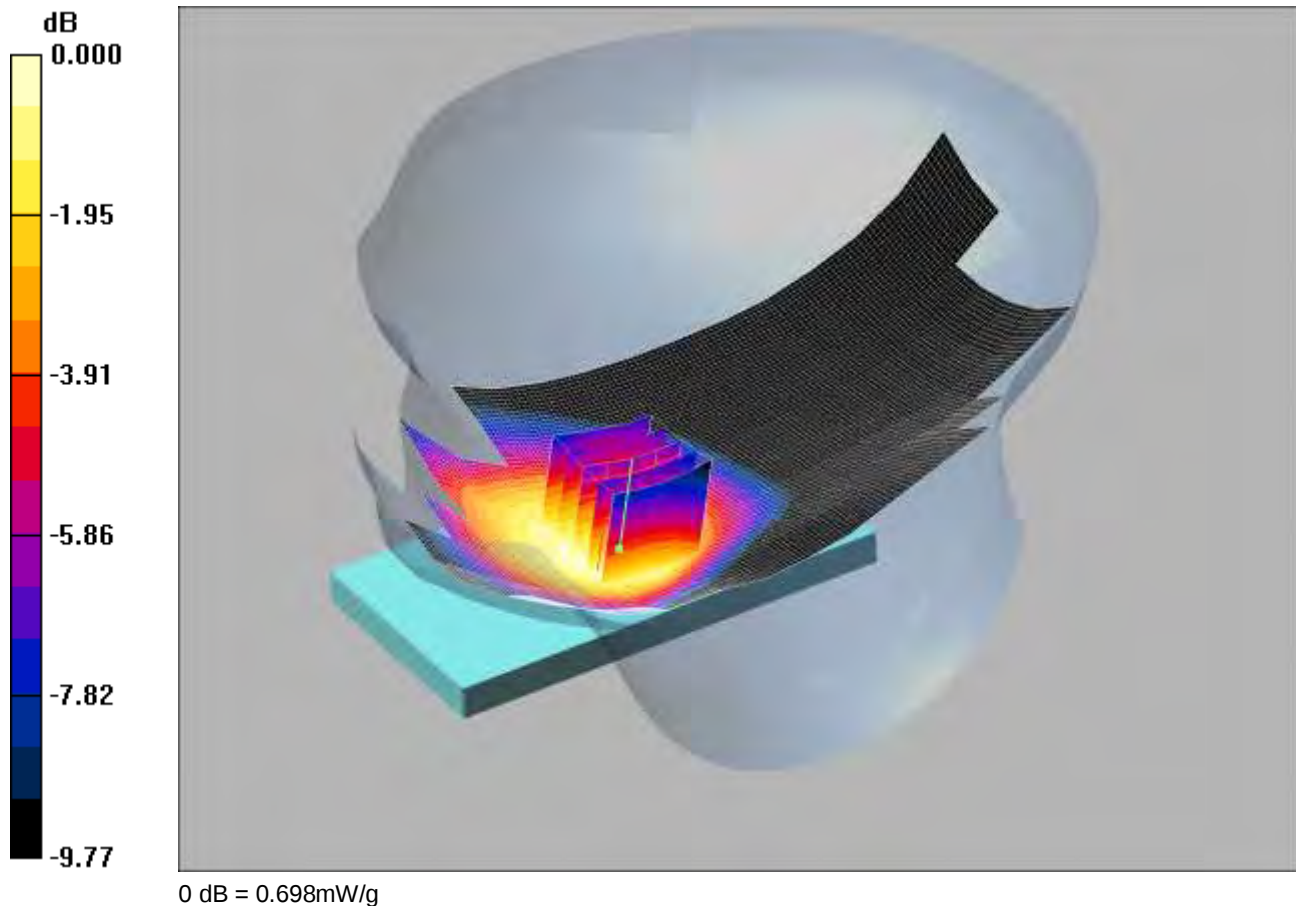
SAR(1 g) = 0.717 mW/g; SAR(10 g) = 0.544 mW/g

Maximum value of SAR (measured) = 0.741 mW/g

SCN/92490/007: Touch Right Antenna Extended GSM CH190

Date: 13/03/2013

DUT: Sony Gaga Anna; Type: Gaga Anna; Serial: PM-0400-BV



Communication System: GSM 850 MHz; Frequency: 836.6 MHz; Duty Cycle: 1:8.3

Medium: 900 MHz HSL Medium parameters used (interpolated): $f = 836.6$ MHz; $\sigma = 0.934$ mho/m; $\epsilon_r = 41.7$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(6.33, 6.33, 6.33); Calibrated: 11/05/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn431; Calibrated: 20/09/2012
- Phantom: SAM 12b (Site 56); Type: SAM 4.0; Serial: TP:1020
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Touch Right - Middle/Area Scan (81x161x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.754 mW/g

Touch Right - Middle/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 6.44 V/m; Power Drift = -0.093 dB

Peak SAR (extrapolated) = 0.865 W/kg

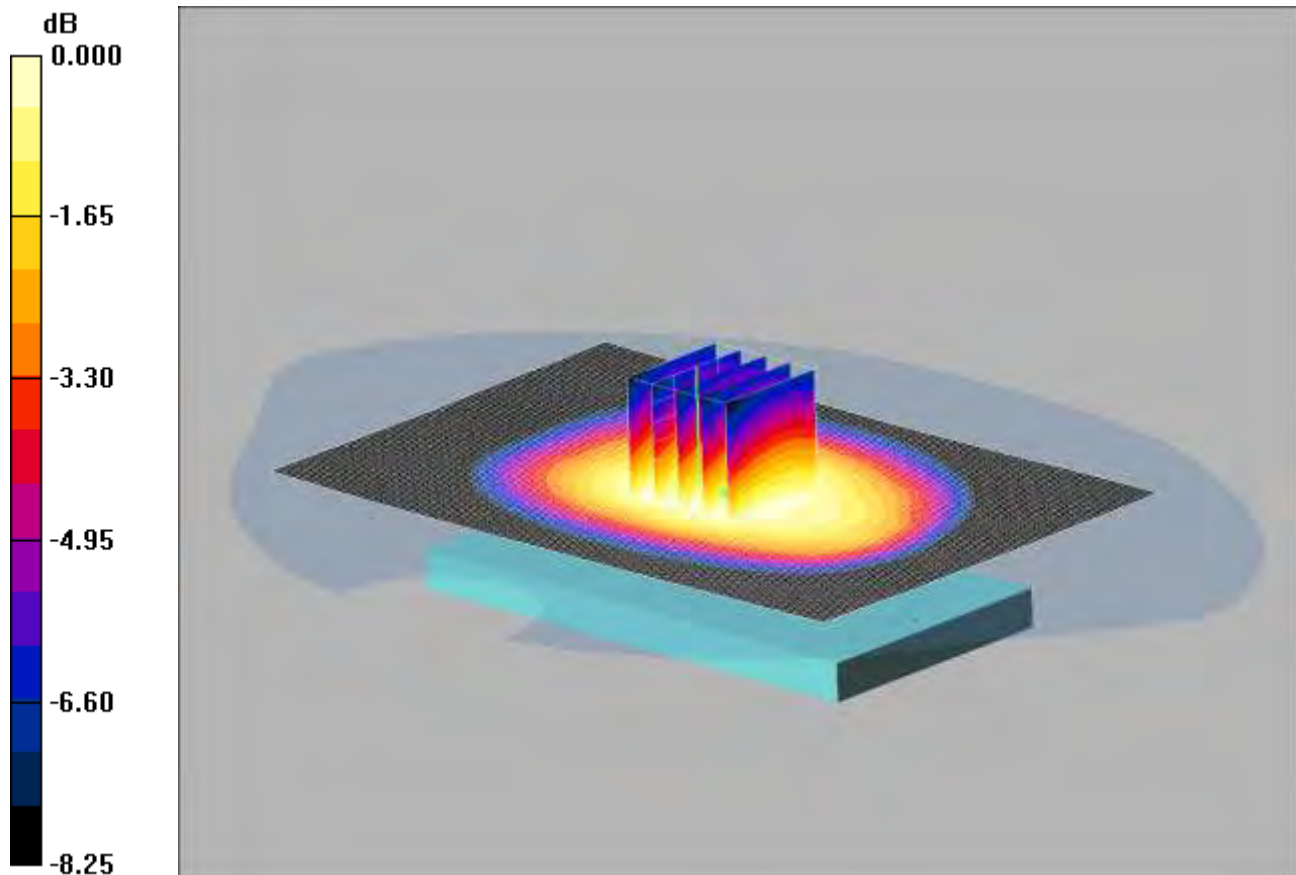
SAR(1 g) = 0.669 mW/g; SAR(10 g) = 0.502 mW/g

Maximum value of SAR (measured) = 0.698 mW/g

SCN/92490/008: Front of EUT Facing Phantom GPRS CH190

Date: 14/03/2013

DUT: Sony Gaga Anna; Type: Gaga Anna; Serial: PM-0400-BV



0 dB = 1.03mW/g

Communication System: GPRS 850 MHz 4TX; Frequency: 836.6 MHz; Duty Cycle: 1:2

Medium: 900 MHz MSL Medium parameters used (interpolated): $f = 836.6$ MHz; $\sigma = 1.03$ mho/m; $\epsilon_r = 53.2$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(6.28, 6.28, 6.28); Calibrated: 11/05/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn431; Calibrated: 20/09/2012
- Phantom: SAM 12a (Site 56); Type: SAM 4.0; Serial: TP:1020
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Front of EUT Facing Phantom - Middle/Area Scan (81x121x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.05 mW/g

Front of EUT Facing Phantom - Middle/Zoom Scan (5x5x7) 2 (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 33.4 V/m; Power Drift = 0.036 dB

Peak SAR (extrapolated) = 1.18 W/kg

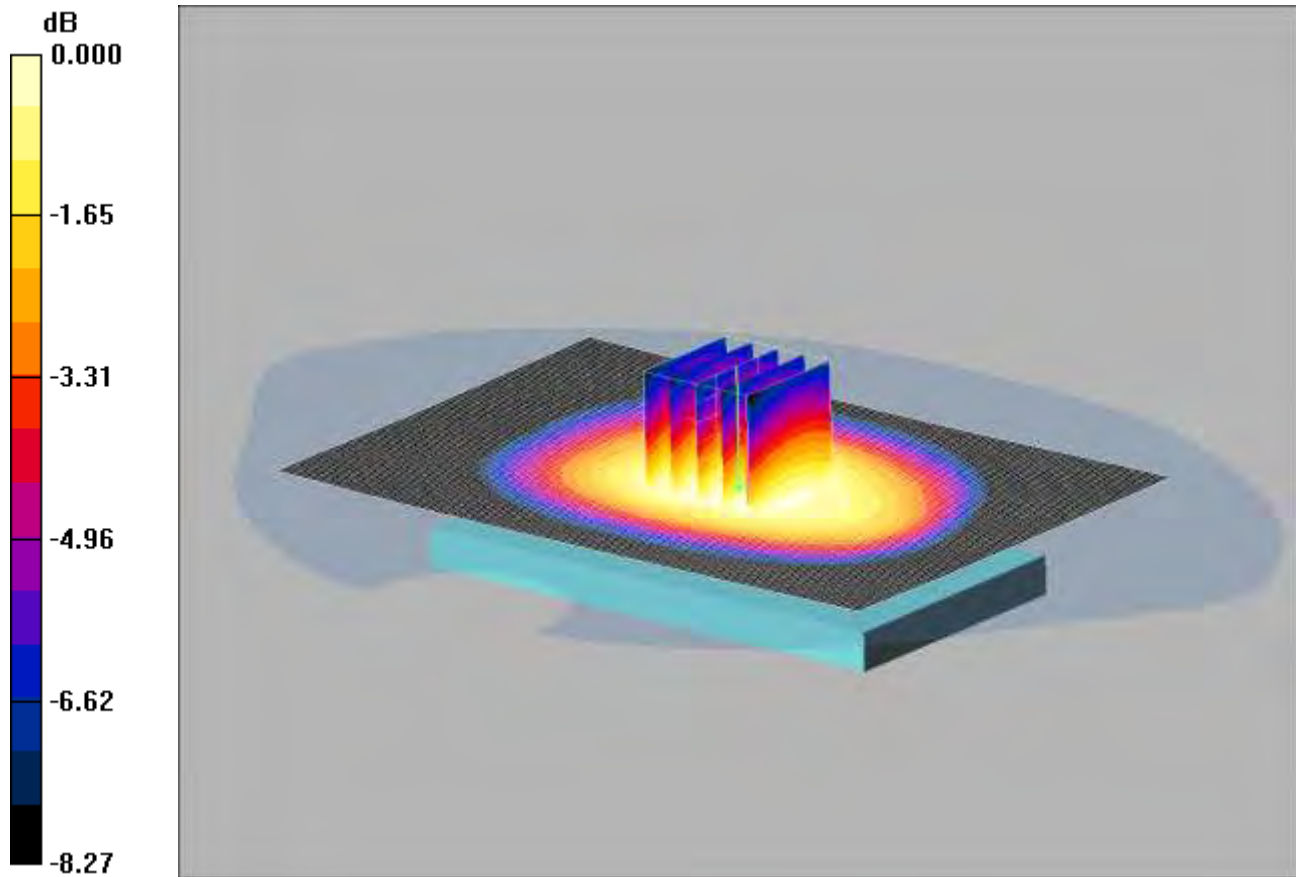
SAR(1 g) = 0.988 mW/g; SAR(10 g) = 0.768 mW/g

Maximum value of SAR (measured) = 1.03 mW/g

SCN/92490/009: Front of EUT Facing Phantom GPRS CH128

Date: 14/03/2013

DUT: Sony Gaga Anna; Type: Gaga Anna; Serial: PM-0400-BV



0 dB = 1.08mW/g

Communication System: GPRS 850 MHz 4TX; Frequency: 824.2 MHz; Duty Cycle: 1:2

Medium: 900 MHz MSL Medium parameters used (interpolated): $f = 824.2$ MHz; $\sigma = 1.02$ mho/m; $\epsilon_r = 53.2$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(6.28, 6.28, 6.28); Calibrated: 11/05/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn431; Calibrated: 20/09/2012
- Phantom: SAM 12a (Site 56); Type: SAM 4.0; Serial: TP:1020
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Front of EUT Facing Phantom - Low/Area Scan (81x121x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 1.07 mW/g

Front of EUT Facing Phantom - Low/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 33.7 V/m; Power Drift = -0.036 dB

Peak SAR (extrapolated) = 1.24 W/kg

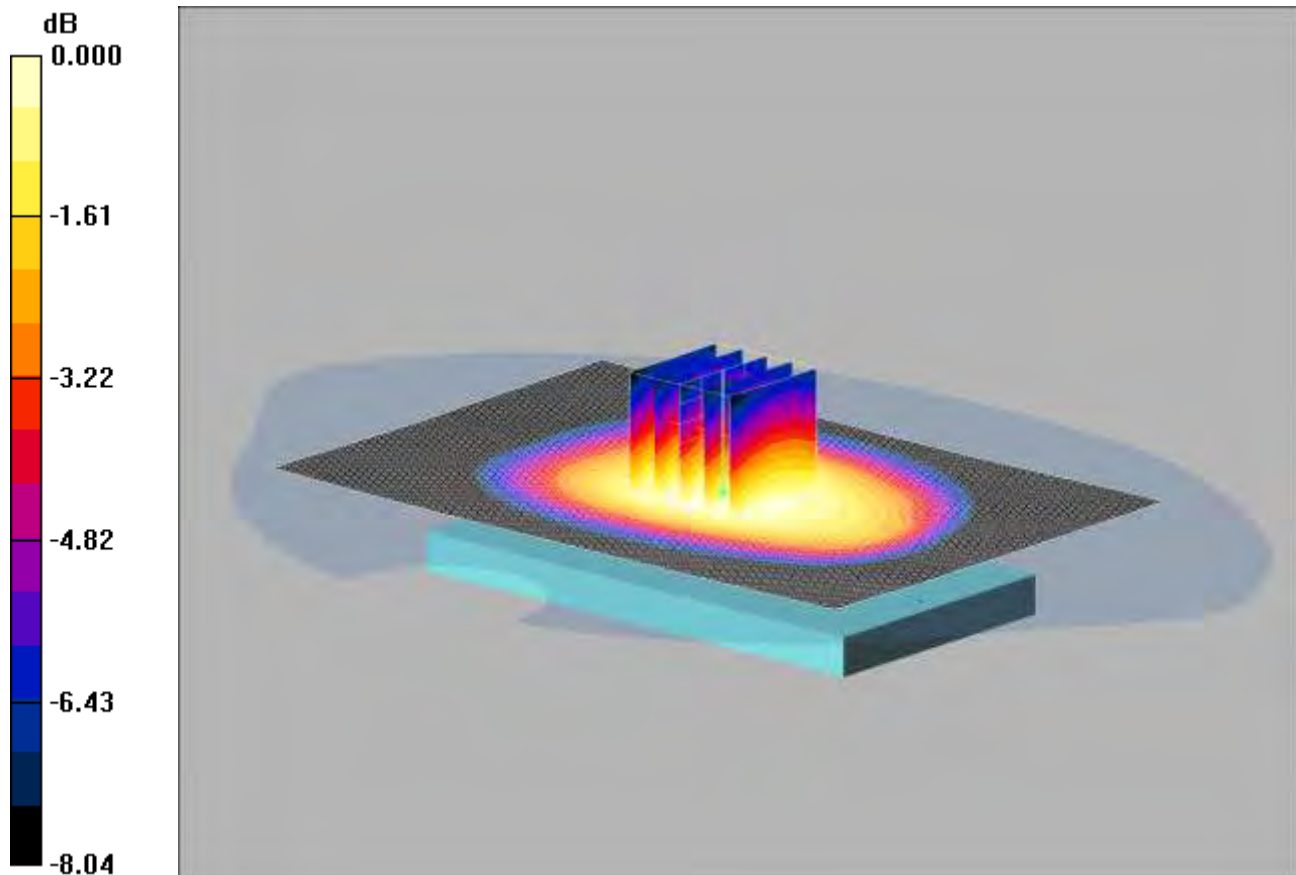
SAR(1 g) = 1.04 mW/g; SAR(10 g) = 0.804 mW/g

Maximum value of SAR (measured) = 1.08 mW/g

SCN/92490/010: Front of EUT Facing Phantom GPRS CH251

Date: 14/03/2013

DUT: Sony Gaga Anna; Type: Gaga Anna; Serial: PM-0400-BV



0 dB = 1.05mW/g

Communication System: GPRS 850 MHz 4TX; Frequency: 848.8 MHz; Duty Cycle: 1:2

Medium: 900 MHz MSL Medium parameters used (interpolated): $f = 848.8$ MHz; $\sigma = 1.04$ mho/m; $\epsilon_r = 53.2$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(6.28, 6.28, 6.28); Calibrated: 11/05/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn431; Calibrated: 20/09/2012
- Phantom: SAM 12a (Site 56); Type: SAM 4.0; Serial: TP:1020
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Front of EUT Facing Phantom - High/Area Scan (81x121x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 1.05 mW/g

Front of EUT Facing Phantom - High/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 32.4 V/m; Power Drift = 0.065 dB

Peak SAR (extrapolated) = 1.21 W/kg

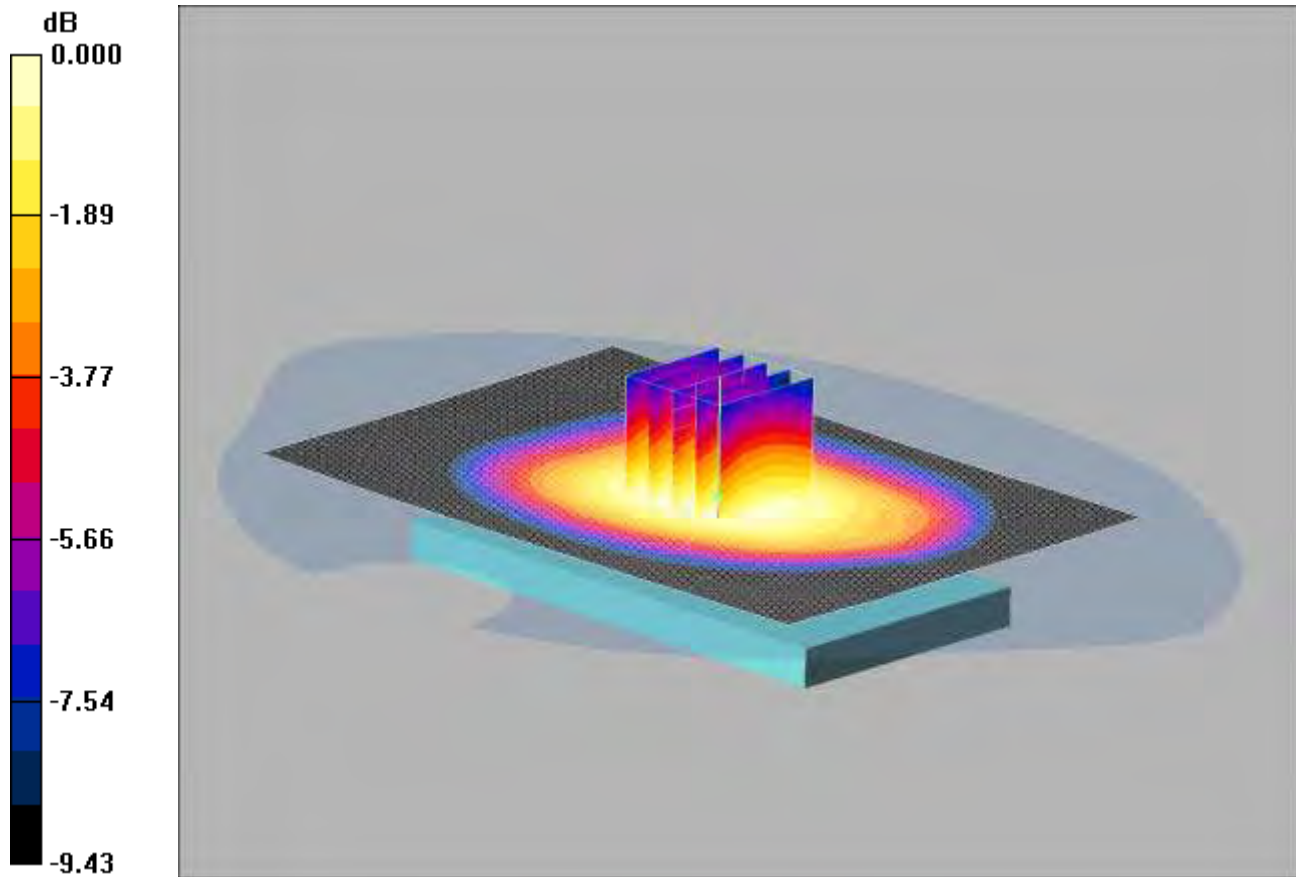
SAR(1 g) = 1 mW/g; SAR(10 g) = 0.780 mW/g

Maximum value of SAR (measured) = 1.05 mW/g

SCN/92490/011: Back of EUT Facing Phantom GPRS CH190

Date: 14/03/2013

DUT: Sony Gaga Anna; Type: Gaga Anna; Serial: PM-0400-BV



0 dB = 1.25mW/g

Communication System: GPRS 850 MHz 4TX; Frequency: 836.6 MHz; Duty Cycle: 1:2

Medium: 900 MHz MSL Medium parameters used (interpolated): $f = 836.6$ MHz; $\sigma = 1.03$ mho/m; $\epsilon_r = 53.2$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(6.28, 6.28, 6.28); Calibrated: 11/05/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn431; Calibrated: 20/09/2012
- Phantom: SAM 12a (Site 56); Type: SAM 4.0; Serial: TP:1020
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Back of EUT Facing Phantom - Middle/Area Scan (81x121x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 1.22 mW/g

Back of EUT Facing Phantom - Middle/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 35.7 V/m; Power Drift = 0.010 dB

Peak SAR (extrapolated) = 1.43 W/kg

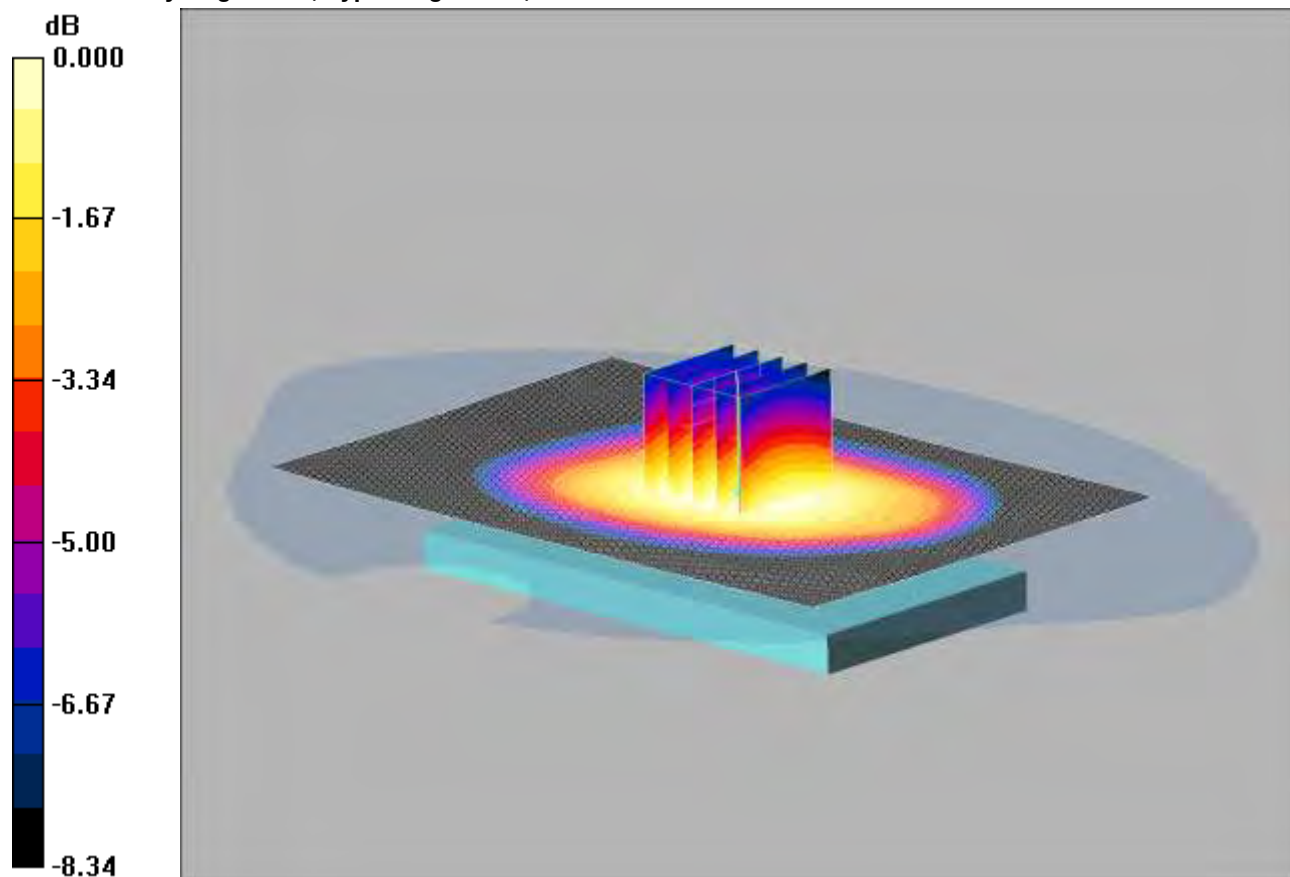
SAR(1 g) = 1.19 mW/g; SAR(10 g) = 0.914 mW/g

Maximum value of SAR (measured) = 1.25 mW/g

SCN/92490/012: Back of EUT Facing Phantom GPRS CH128

Date: 14/03/2013

DUT: Sony Gaga Anna; Type: Gaga Anna; Serial: PM-0400-BV



0 dB = 1.31mW/g

Communication System: GPRS 850 MHz 4TX; Frequency: 824.2 MHz; Duty Cycle: 1:2

Medium: 900 MHz MSL Medium parameters used (interpolated): $f = 824.2$ MHz; $\sigma = 1.02$ mho/m; $\epsilon_r = 53.2$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(6.28, 6.28, 6.28); Calibrated: 11/05/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn431; Calibrated: 20/09/2012
- Phantom: SAM 12a (Site 56); Type: SAM 4.0; Serial: TP:1020
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Back of EUT Facing Phantom - Low/Area Scan (81x121x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 1.30 mW/g

Back of EUT Facing Phantom - Low/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 36.7 V/m; Power Drift = 0.014 dB

Peak SAR (extrapolated) = 1.48 W/kg

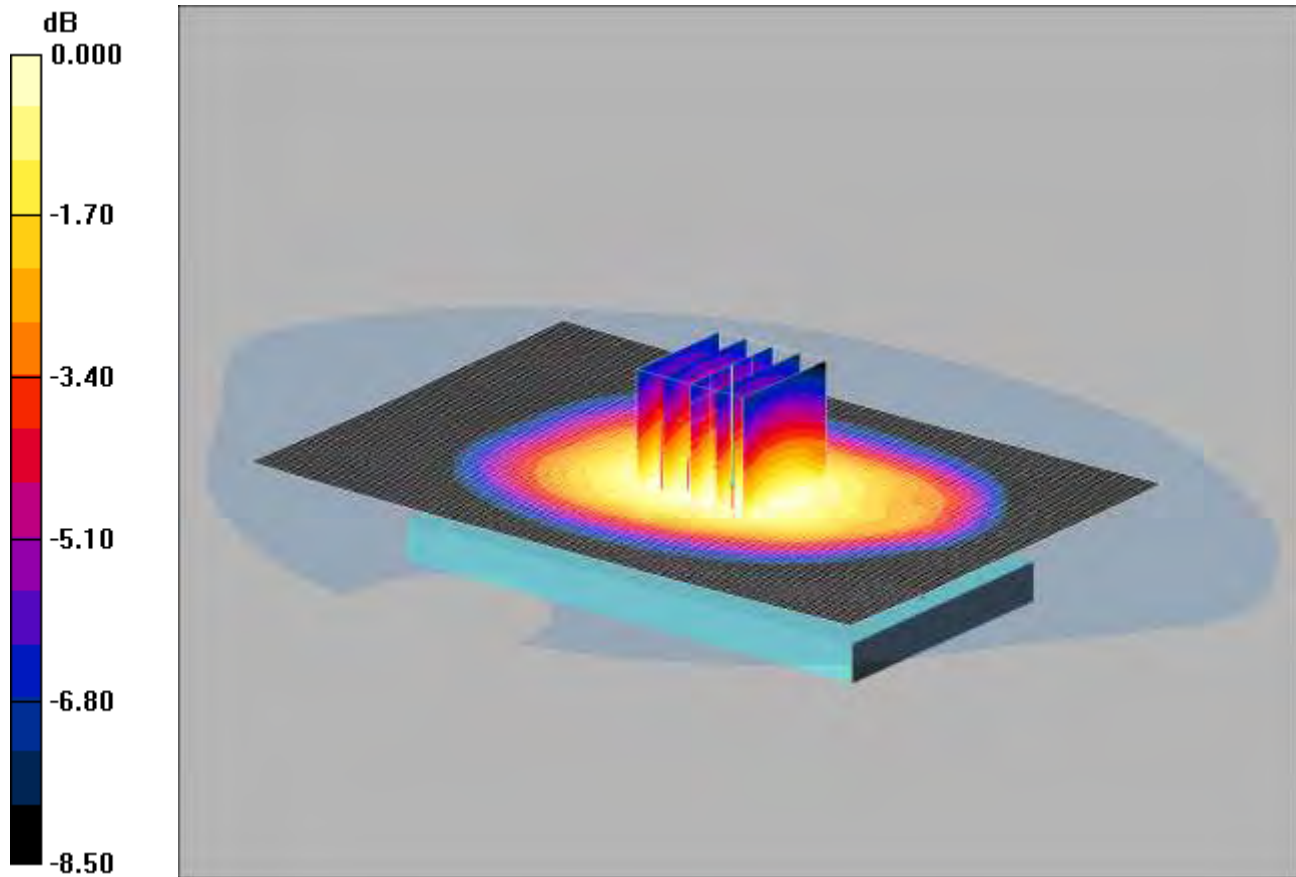
SAR(1 g) = 1.25 mW/g; SAR(10 g) = 0.961 mW/g

Maximum value of SAR (measured) = 1.31 mW/g

SCN/92490/013: Back of EUT Facing Phantom GPRS CH251

Date: 14/03/2013

DUT: Sony Gaga Anna; Type: Gaga Anna; Serial: PM-0400-BV



0 dB = 1.16mW/g

Communication System: GPRS 850 MHz 4TX; Frequency: 848.8 MHz; Duty Cycle: 1:2

Medium: 900 MHz MSL Medium parameters used (interpolated): $f = 848.8$ MHz; $\sigma = 1.04$ mho/m; $\epsilon_r = 53.2$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(6.28, 6.28, 6.28); Calibrated: 11/05/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn431; Calibrated: 20/09/2012
- Phantom: SAM 12a (Site 56); Type: SAM 4.0; Serial: TP:1020
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Back of EUT Facing Phantom - High/Area Scan (81x121x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 1.16 mW/g

Back of EUT Facing Phantom - High/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 34.4 V/m; Power Drift = 0.142 dB

Peak SAR (extrapolated) = 1.34 W/kg

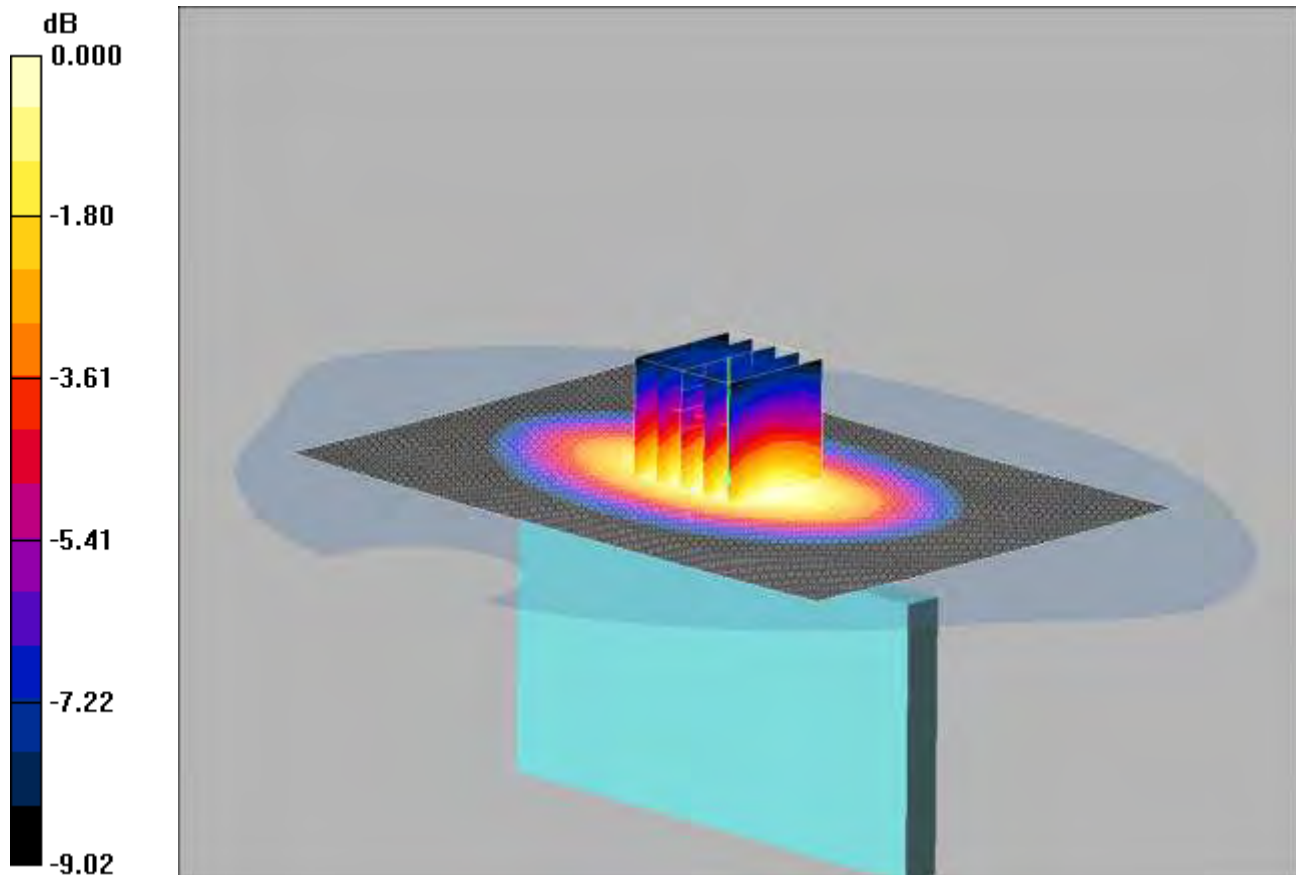
SAR(1 g) = 1.11 mW/g; SAR(10 g) = 0.858 mW/g

Maximum value of SAR (measured) = 1.16 mW/g

SCN/92490/014: Left Hand Side of EUT Facing Phantom GPRS CH190

Date: 14/03/2013

DUT: Sony Gaga Anna; Type: Gaga Anna; Serial: PM-0400-BV



0 dB = 0.779mW/g

Communication System: GPRS 850 MHz 4TX; Frequency: 836.6 MHz; Duty Cycle: 1:2

Medium: 900 MHz MSL Medium parameters used (interpolated): $f = 836.6$ MHz; $\sigma = 1.03$ mho/m; $\epsilon_r = 53.2$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(6.28, 6.28, 6.28); Calibrated: 11/05/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn431; Calibrated: 20/09/2012
- Phantom: SAM 12a (Site 56); Type: SAM 4.0; Serial: TP:1020
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Left Hand Side of EUT Facing Phantom - Middle/Area Scan (81x121x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.788 mW/g

Left Hand Side of EUT Facing Phantom - Middle/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 28.7 V/m; Power Drift = -0.003 dB

Peak SAR (extrapolated) = 0.953 W/kg

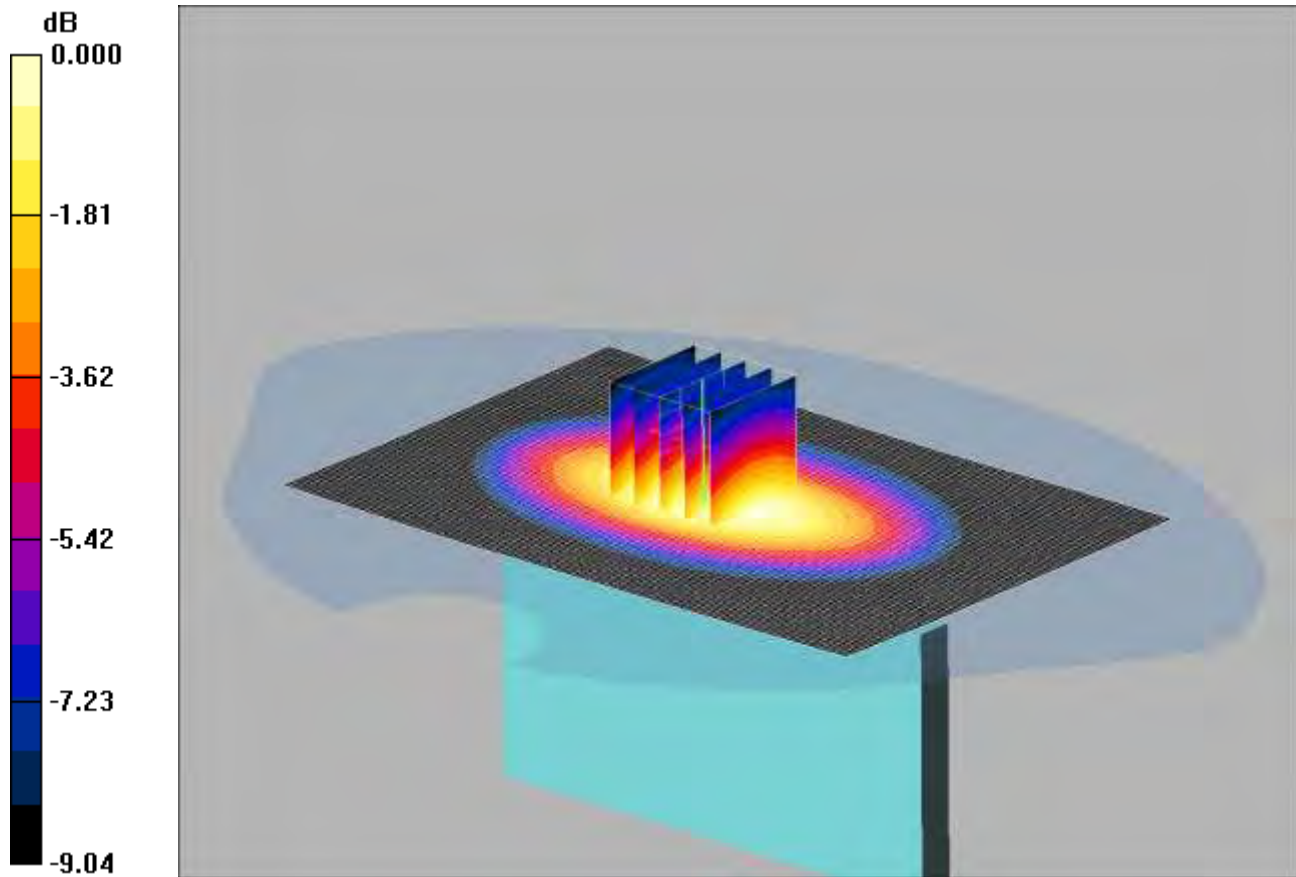
SAR(1 g) = 0.732 mW/g; SAR(10 g) = 0.517 mW/g

Maximum value of SAR (measured) = 0.779 mW/g

SCN/92490/015: Right Hand Side of EUT Facing Phantom GPRS CH190

Date: 14/03/2013

DUT: Sony Gaga Anna; Type: Gaga Anna; Serial: PM-0400-BV



0 dB = 0.810mW/g

Communication System: GPRS 850 MHz 4TX; Frequency: 836.6 MHz; Duty Cycle: 1:2

Medium: 900 MHz MSL Medium parameters used (interpolated): $f = 836.6$ MHz; $\sigma = 1.03$ mho/m; $\epsilon_r = 53.2$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(6.28, 6.28, 6.28); Calibrated: 11/05/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn431; Calibrated: 20/09/2012
- Phantom: SAM 12a (Site 56); Type: SAM 4.0; Serial: TP:1020
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Right Hand Side of EUT Facing Phantom - Middle/Area Scan (81x121x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.819 mW/g

Right Hand Side of EUT Facing Phantom - Middle/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 29.4 V/m; Power Drift = -0.003 dB

Peak SAR (extrapolated) = 0.994 W/kg

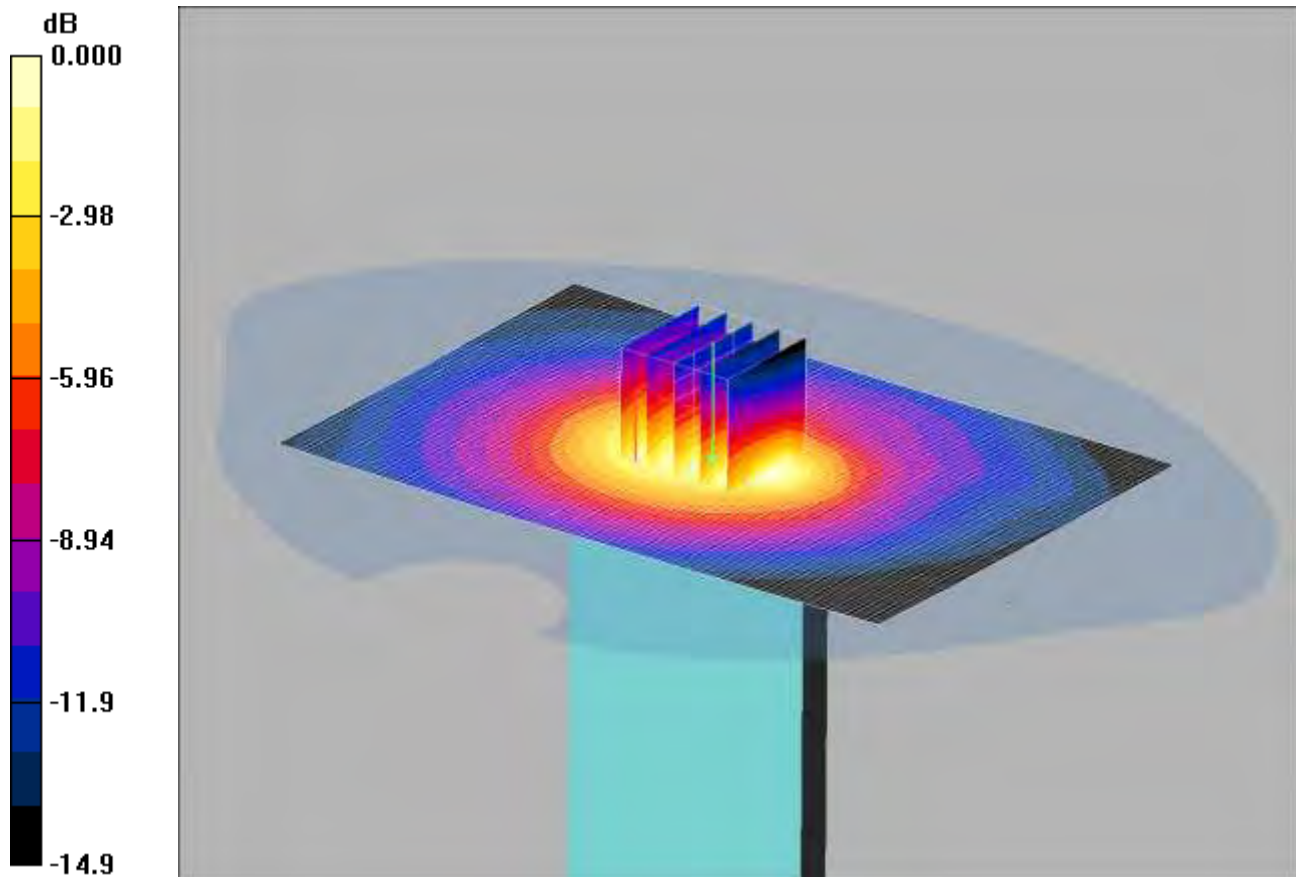
SAR(1 g) = 0.759 mW/g; SAR(10 g) = 0.539 mW/g

Maximum value of SAR (measured) = 0.810 mW/g

SCN/92490/016: Bottom Hand Side of EUT Facing Phantom GPRS CH190

Date: 15/03/2013

DUT: Sony Gaga Anna; Type: Gaga Anna; Serial: PM-0400-BV



0 dB = 0.222mW/g

Communication System: GPRS 850 MHz 4TX; Frequency: 836.6 MHz; Duty Cycle: 1:2

Medium: 900 MHz MSL Medium parameters used (interpolated): $f = 836.6$ MHz; $\sigma = 1.03$ mho/m; $\epsilon_r = 53.2$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(6.28, 6.28, 6.28); Calibrated: 11/05/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn431; Calibrated: 20/09/2012
- Phantom: SAM 12a (Site 56); Type: SAM 4.0; Serial: TP:1020
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Bottom of EUT Facing Phantom - Middle/Area Scan (81x121x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.225 mW/g

Bottom of EUT Facing Phantom - Middle/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 15.5 V/m; Power Drift = -0.043 dB

Peak SAR (extrapolated) = 0.467 W/kg

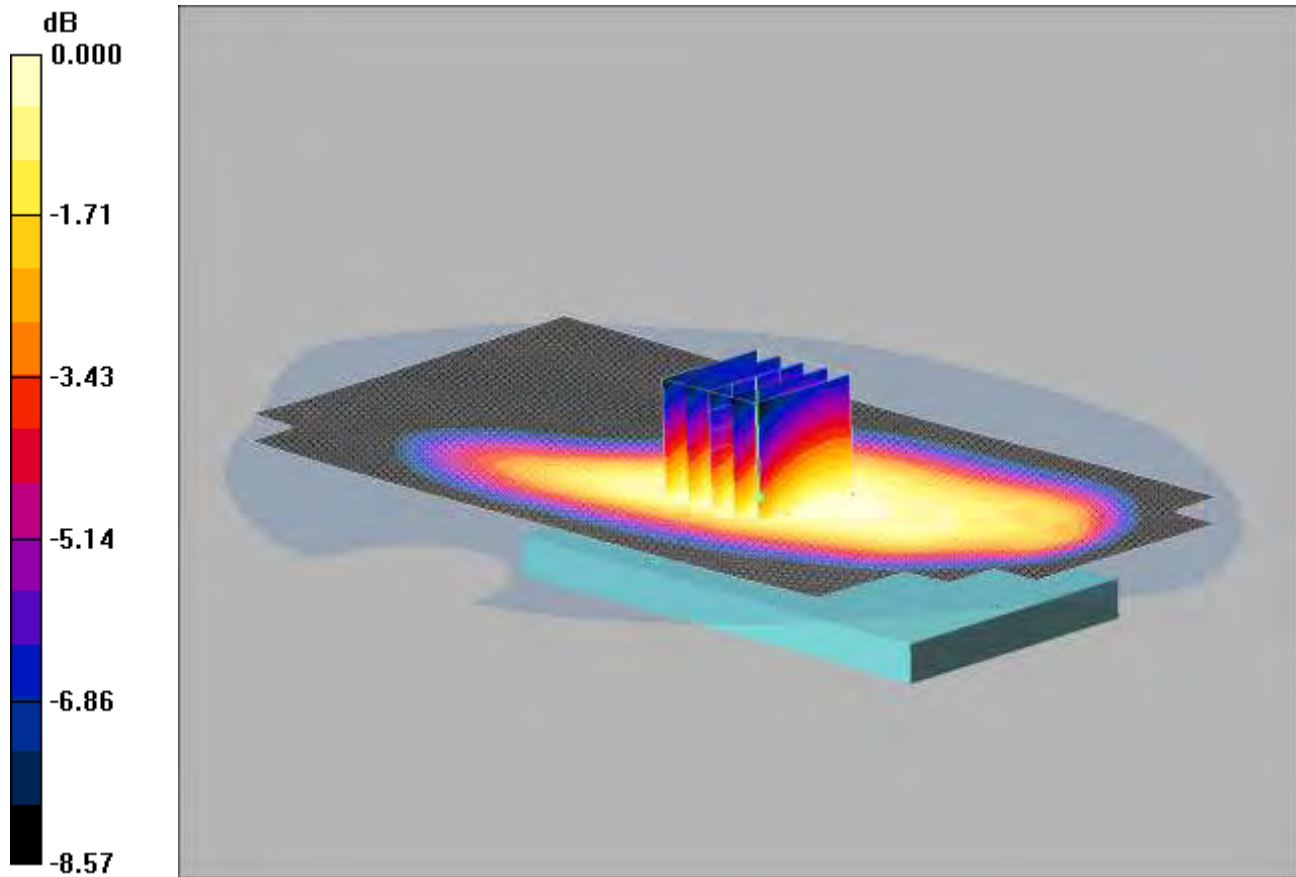
SAR(1 g) = 0.208 mW/g; SAR(10 g) = 0.118 mW/g

Maximum value of SAR (measured) = 0.222 mW/g

SCN/92490/017: Back of EUT Antenna Extended Facing Phantom GPRS CH128

Date: 15/03/2013

DUT: Sony Gaga Anna; Type: Gaga Anna; Serial: PM-0400-BV



0 dB = 0.780mW/g

Communication System: GPRS 850 MHz 4TX; Frequency: 824.2 MHz; Duty Cycle: 1:2

Medium: 900 MHz MSL Medium parameters used (interpolated): $f = 824.2$ MHz; $\sigma = 1.02$ mho/m; $\epsilon_r = 53.2$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(6.28, 6.28, 6.28); Calibrated: 11/05/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn431; Calibrated: 20/09/2012
- Phantom: SAM 12a (Site 56); Type: SAM 4.0; Serial: TP:1020
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Back of EUT Facing Phantom - Low/Area Scan (81x161x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.779 mW/g

Back of EUT Facing Phantom - Low/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 23.4 V/m; Power Drift = 0.039 dB

Peak SAR (extrapolated) = 0.906 W/kg

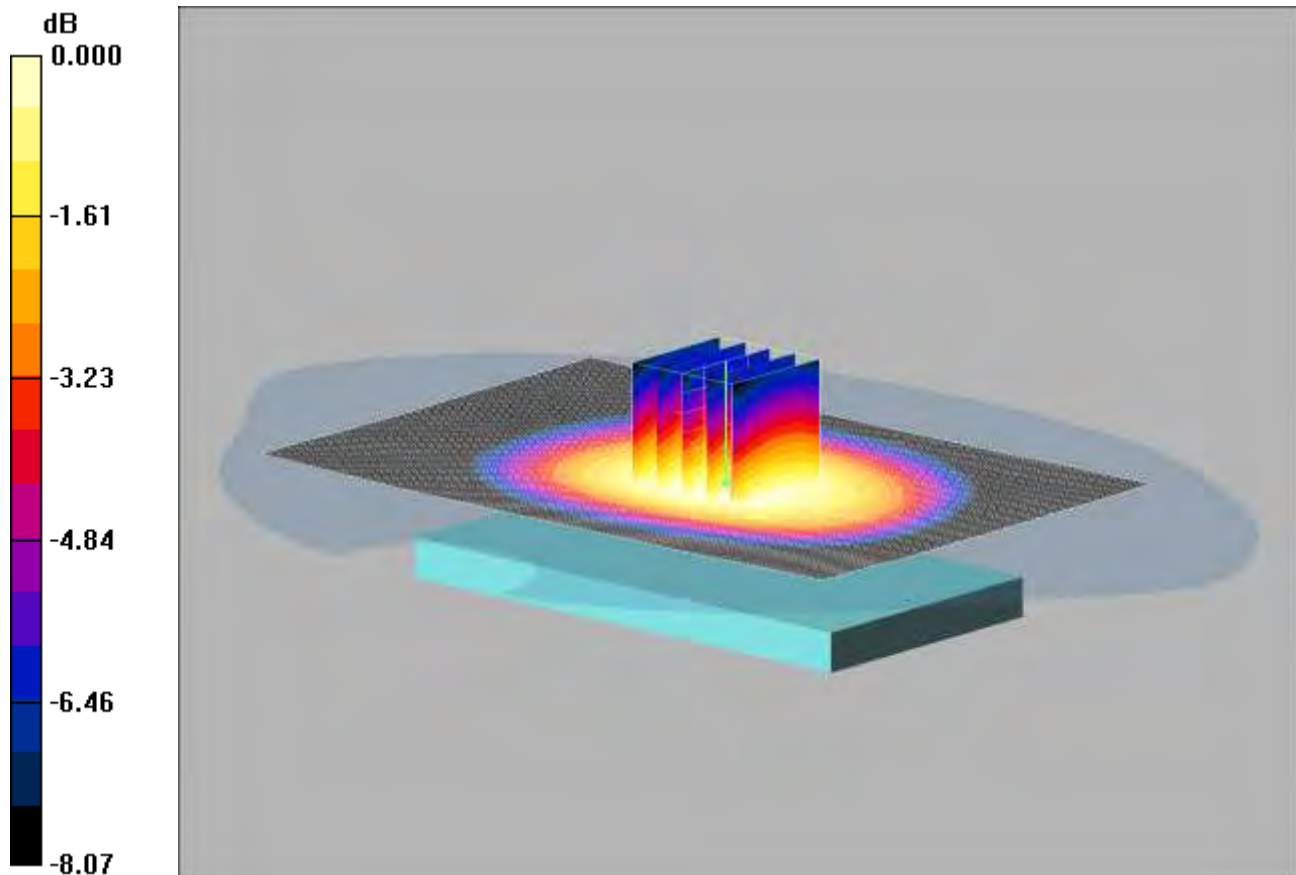
SAR(1 g) = 0.738 mW/g; SAR(10 g) = 0.560 mW/g

Maximum value of SAR (measured) = 0.780 mW/g

SCN/92490/018: Front of EUT Facing Phantom at 15mm GSM CH128

Date: 15/03/2013

DUT: Sony Gaga Anna; Type: Gaga Anna; Serial: PM-0400-BV



0 dB = 0.822mW/g

Communication System: GSM 850 MHz; Frequency: 824.2 MHz; Duty Cycle: 1:8.3

Medium: 900 MHz MSL Medium parameters used (interpolated): $f = 824.2$ MHz; $\sigma = 1.02$ mho/m; $\epsilon_r = 53.2$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(6.28, 6.28, 6.28); Calibrated: 11/05/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn431; Calibrated: 20/09/2012
- Phantom: SAM 12a (Site 56); Type: SAM 4.0; Serial: TP:1020
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Front of EUT Facing Phantom - Low/Area Scan (81x121x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.825 mW/g

Front of EUT Facing Phantom - Low/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 29.0 V/m; Power Drift = 0.047 dB

Peak SAR (extrapolated) = 0.940 W/kg

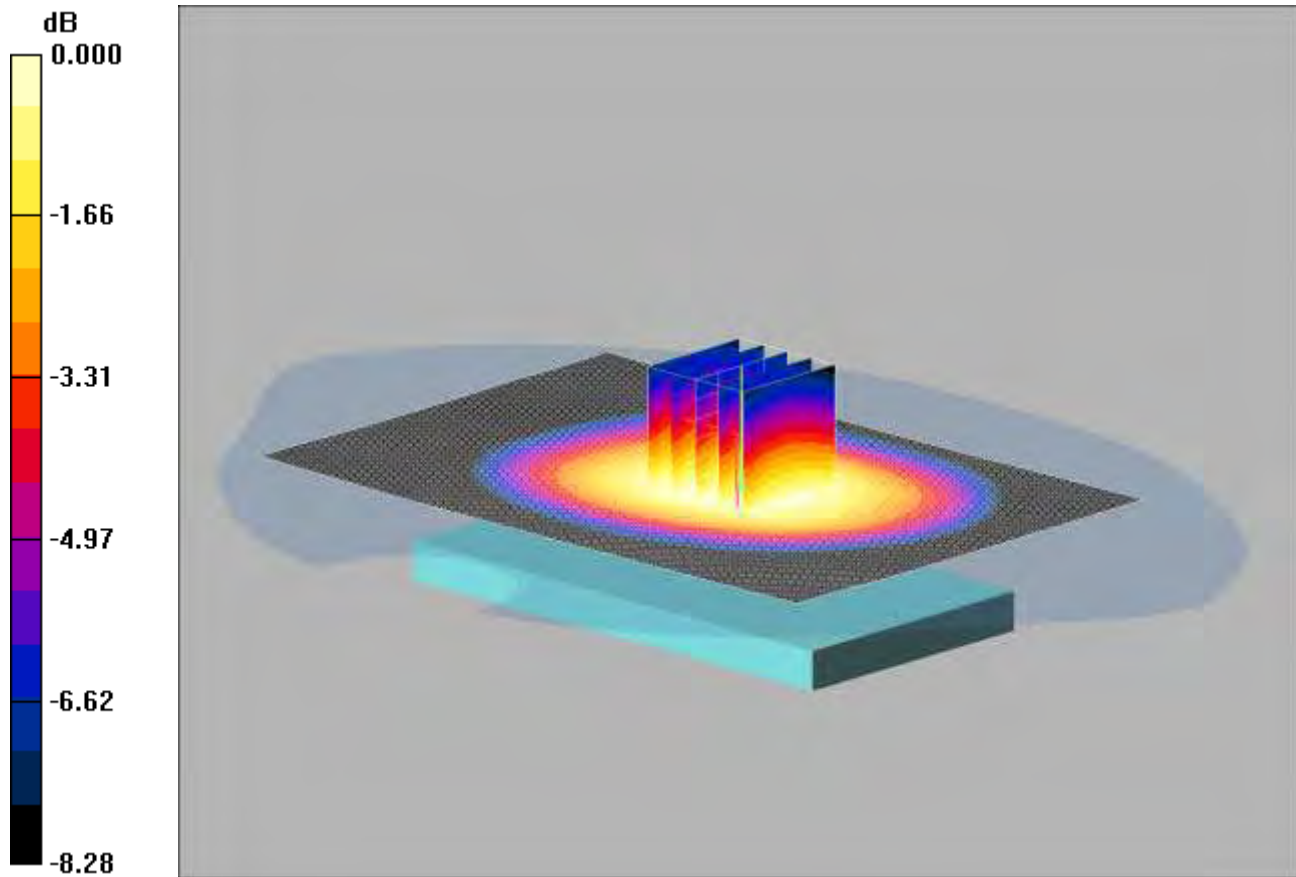
SAR(1 g) = 0.782 mW/g; SAR(10 g) = 0.601 mW/g

Maximum value of SAR (measured) = 0.822 mW/g

SCN/92490/019: Back of EUT Facing Phantom at 15mm GSM CH128

Date: 15/03/2013

DUT: Sony Gaga Anna; Type: Gaga Anna; Serial: PM-0400-BV



0 dB = 0.894mW/g

Communication System: GSM 850 MHz; Frequency: 824.2 MHz; Duty Cycle: 1:8.3

Medium: 900 MHz MSL Medium parameters used (interpolated): $f = 824.2$ MHz; $\sigma = 1.02$ mho/m; $\epsilon_r = 53.2$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(6.28, 6.28, 6.28); Calibrated: 11/05/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn431; Calibrated: 20/09/2012
- Phantom: SAM 12a (Site 56); Type: SAM 4.0; Serial: TP:1020
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Back of EUT Facing Phantom - Low/Area Scan (81x121x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.900 mW/g

Back of EUT Facing Phantom - Low/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 30.4 V/m; Power Drift = -0.007 dB

Peak SAR (extrapolated) = 1.02 W/kg

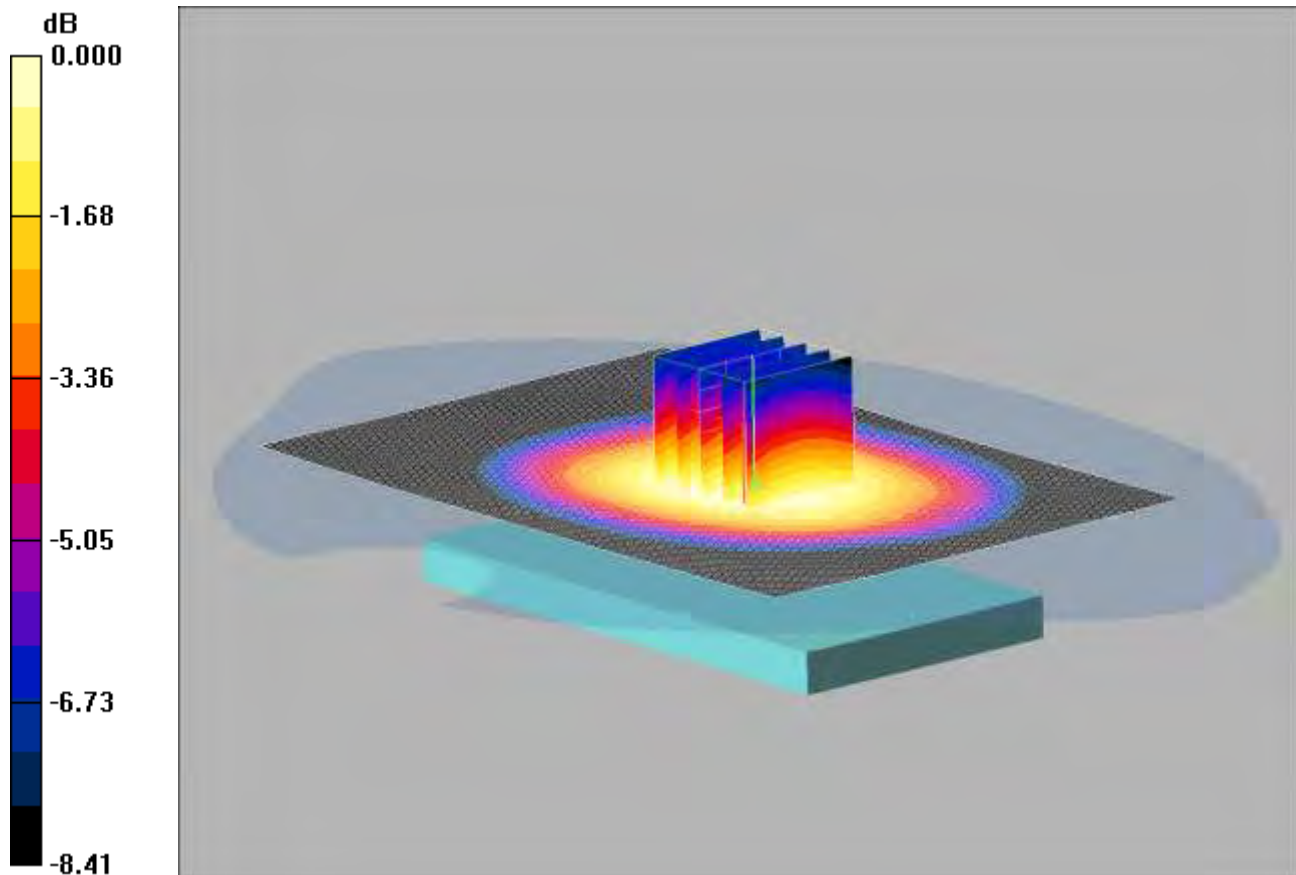
SAR(1 g) = 0.851 mW/g; SAR(10 g) = 0.650 mW/g

Maximum value of SAR (measured) = 0.894 mW/g

SCN/92490/020: Back of EUT Facing Phantom at 15mm GSM CH190

Date: 15/03/2013

DUT: Sony Gaga Anna; Type: Gaga Anna; Serial: PM-0400-BV



0 dB = 0.860mW/g

Communication System: GSM 850 MHz; Frequency: 836.6 MHz; Duty Cycle: 1:8.3

Medium: 900 MHz MSL Medium parameters used (interpolated): $f = 836.6$ MHz; $\sigma = 1.03$ mho/m; $\epsilon_r = 53.2$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(6.28, 6.28, 6.28); Calibrated: 11/05/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn431; Calibrated: 20/09/2012
- Phantom: SAM 12a (Site 56); Type: SAM 4.0; Serial: TP:1020
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Back of EUT Facing Phantom - Middle/Area Scan (81x121x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.871 mW/g

Back of EUT Facing Phantom - Middle/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 29.9 V/m; Power Drift = -0.005 dB

Peak SAR (extrapolated) = 0.987 W/kg

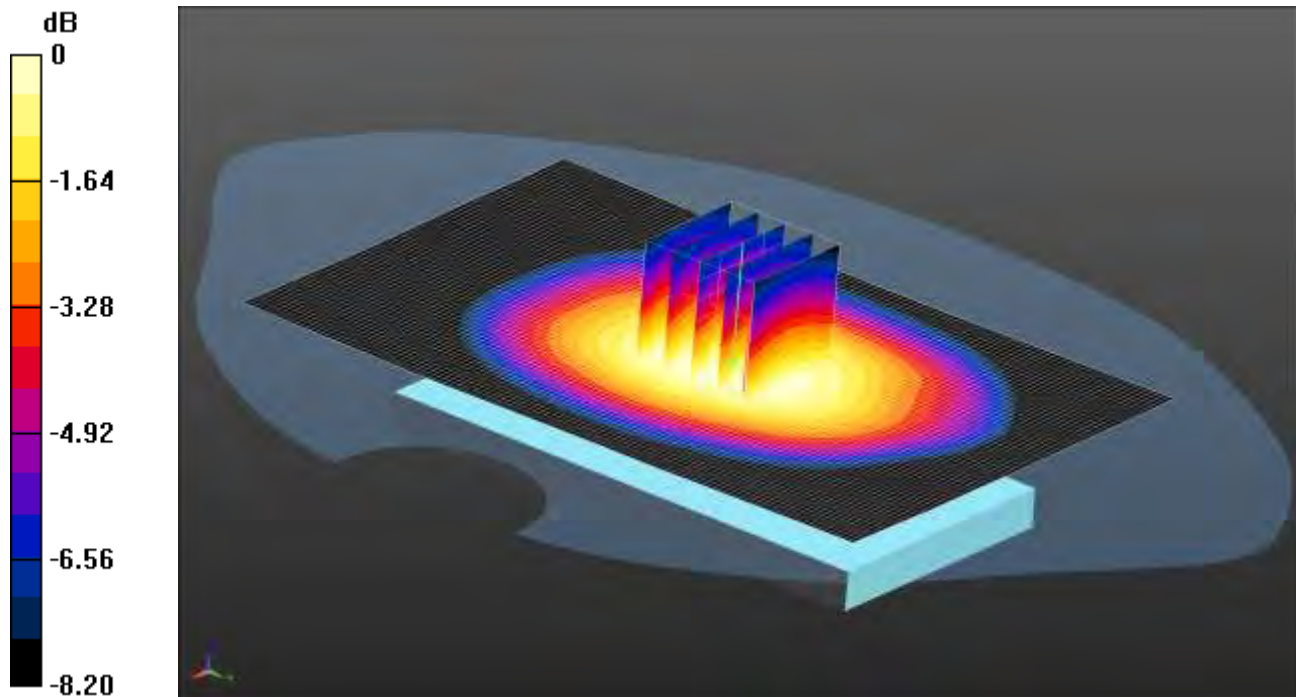
SAR(1 g) = 0.815 mW/g; SAR(10 g) = 0.620 mW/g

Maximum value of SAR (measured) = 0.860 mW/g

SCN/92490/021: Back of EUT Facing Phantom at 15mm GSM CH251

Date: 15/03/2013

DUT: Sony Gaga Anna; Type: Gaga Anna; Serial: PM-0400-BV



0 dB = 0.745 W/kg = -1.28 dBW/kg

Communication System: GSM 850 MHz; Frequency: 848.8 MHz; Duty Cycle: 1:8.3

Medium: 900 MHz MSL Medium parameters used (interpolated): $f = 848.8$ MHz; $\sigma = 1.04$ mho/m; $\epsilon_r = 53.153$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(6.28, 6.28, 6.28); Calibrated: 11/05/2012;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn431; Calibrated: 20/09/2012
- Phantom: SAM 12a (Site 56); Type: SAM 4.0; Serial: TP:1020
- ; SEMCAD X Version 14.6.7 (6848)

Configuration/Back of EUT Facing Phantom - High/Area Scan (81x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.747 W/kg

Configuration/Back of EUT Facing Phantom - High/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 27.738 V/m; Power Drift = 0.00 dB

Peak SAR (extrapolated) = 0.857 W/kg

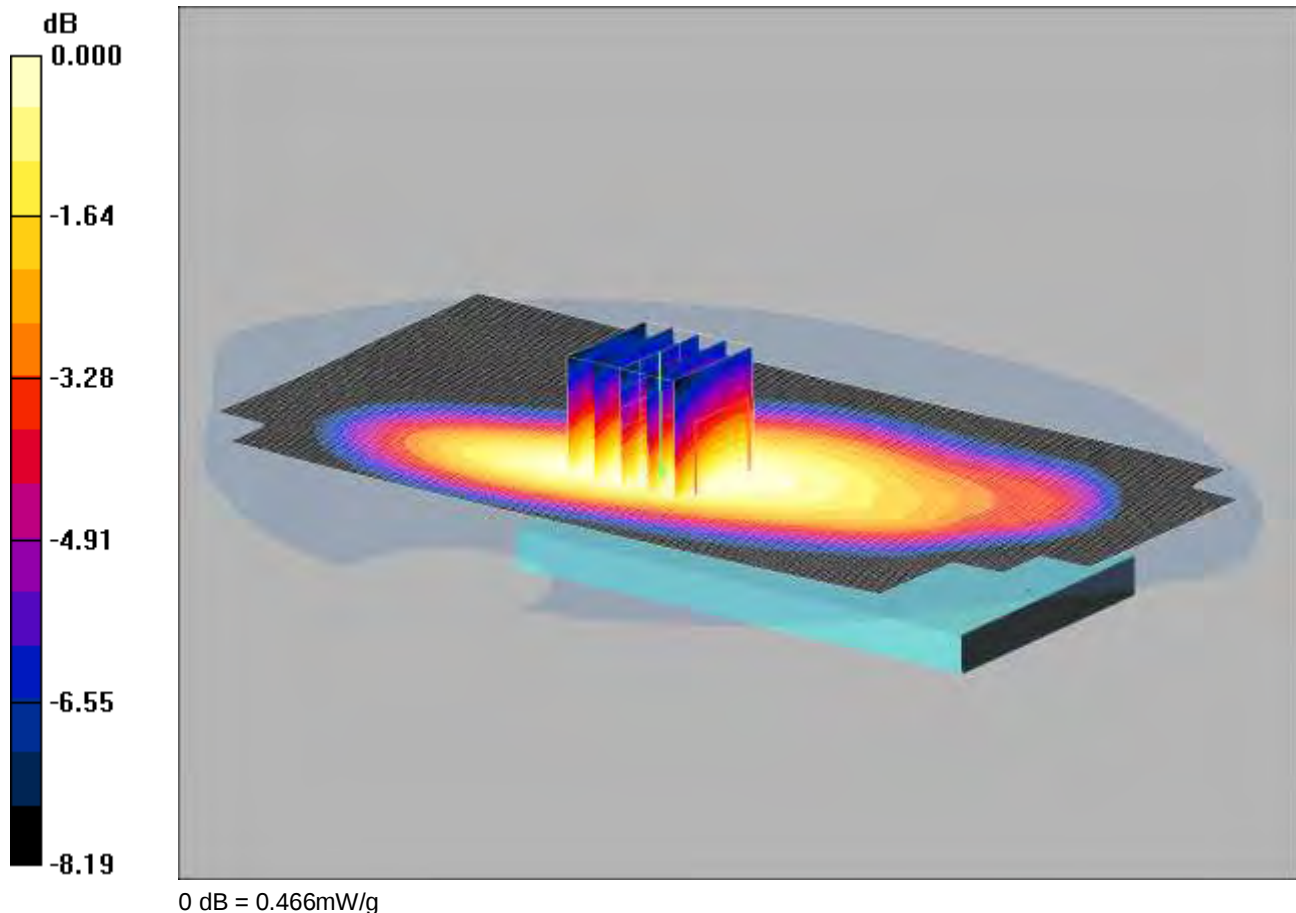
SAR(1 g) = 0.708 W/kg; SAR(10 g) = 0.537 W/kg

Maximum value of SAR (measured) = 0.745 W/kg

SCN/92490/022: Back of EUT Antenna Extended Facing Phantom at 15mm GSM CH128

Date: 15/03/2013

DUT: Sony Gaga Anna; Type: Gaga Anna; Serial: PM-0400-BV



Communication System: GSM 850 MHz; Frequency: 824.2 MHz; Duty Cycle: 1:8.3

Medium: 900 MHz MSL Medium parameters used (interpolated): $f = 824.2$ MHz; $\sigma = 1.02$ mho/m; $\epsilon_r = 53.2$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(6.28, 6.28, 6.28); Calibrated: 11/05/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn431; Calibrated: 20/09/2012
- Phantom: SAM 12a (Site 56); Type: SAM 4.0; Serial: TP:1020
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Back of EUT Facing Phantom - Low/Area Scan (81x161x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.473 mW/g

Back of EUT Facing Phantom - Low/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 20.4 V/m; Power Drift = -0.003 dB

Peak SAR (extrapolated) = 0.554 W/kg

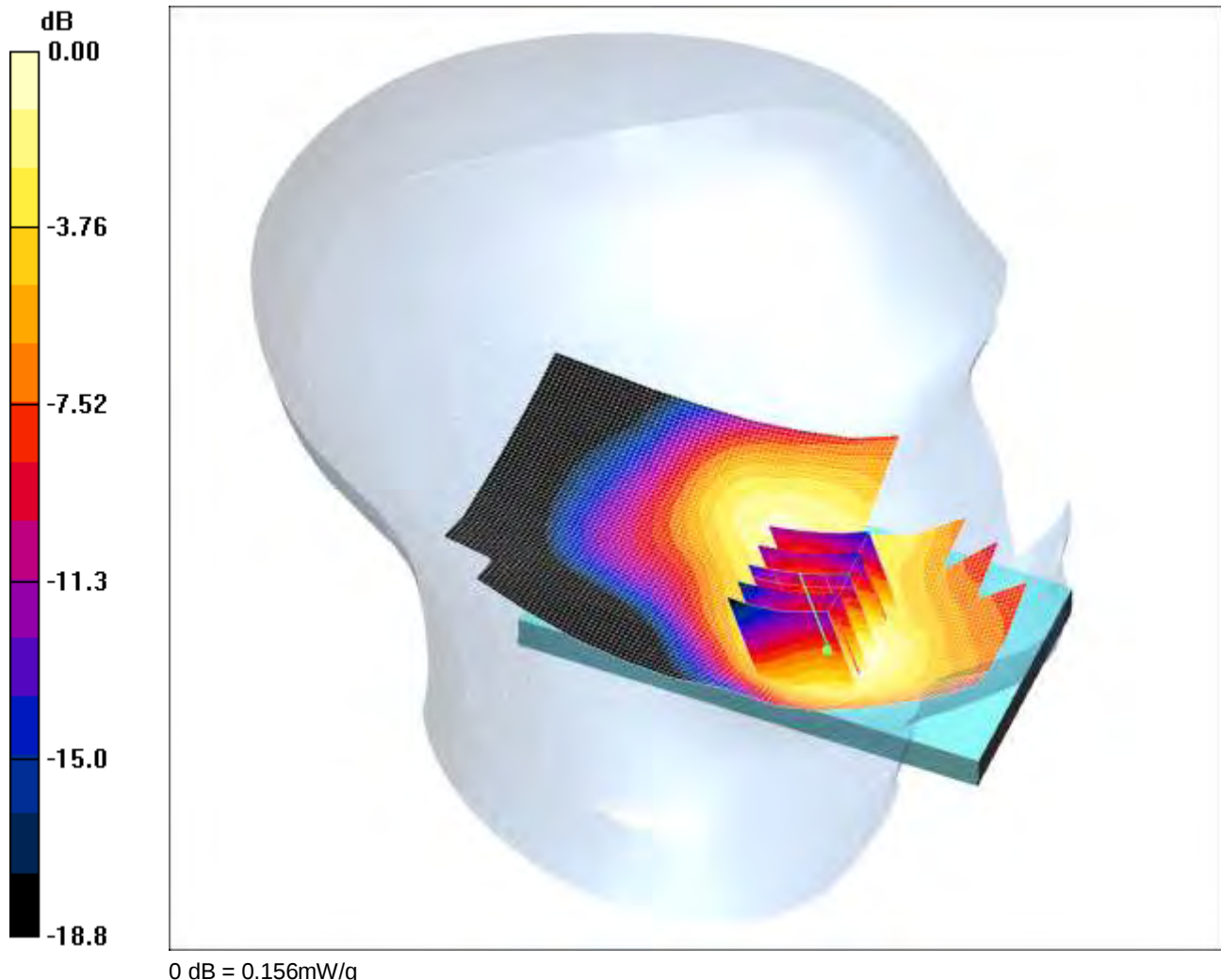
SAR(1 g) = 0.443 mW/g; SAR(10 g) = 0.334 mW/g

Maximum value of SAR (measured) = 0.466 mW/g

SCN/92490/023: Touch Left PCS CH661

Date: 18/03/2013

DUT: Sony Gaga Anna; Type: Gaga Anna; Serial: PM-0400-BV



Communication System: PCS 1900; Frequency: 1880 MHz; Duty Cycle: 1:8.3

Medium: 1900 MHz HSL Medium parameters used (interpolated): $f = 1880$ MHz; $\sigma = 1.41$ mho/m; $\epsilon_r = 39$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1528; ConvF(4.92, 4.92, 4.92); Calibrated: 26/07/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn432; Calibrated: 02/05/2012
- Phantom: SAM 12b (Site 57); Type: SAM 4.0; Serial: TP:1031
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 145

Touch Left - Middle 2/Area Scan (71x121x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.166 mW/g

Touch Left - Middle 2/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 2.49 V/m; Power Drift = 0.177 dB

Peak SAR (extrapolated) = 0.211 W/kg

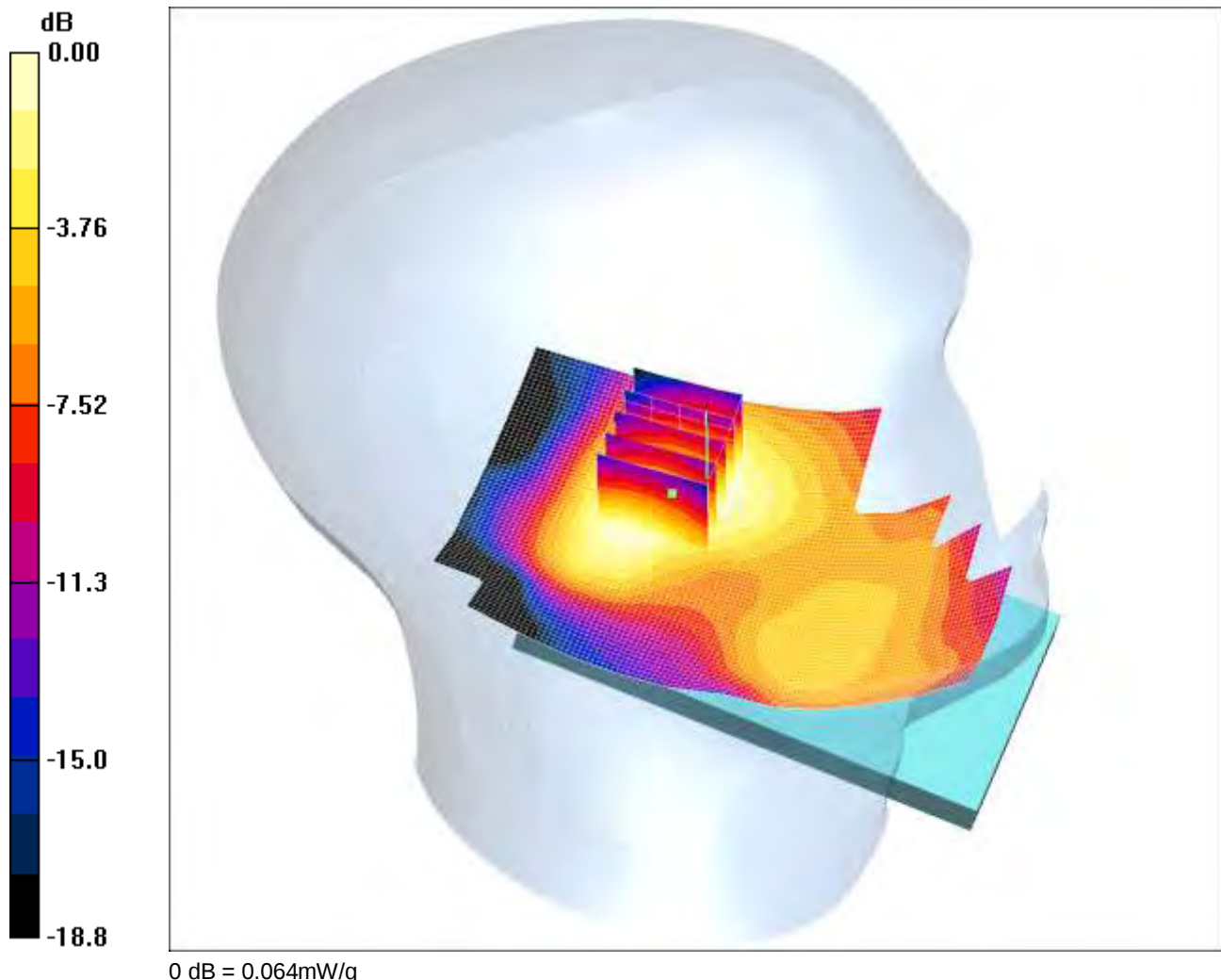
SAR(1 g) = 0.146 mW/g; SAR(10 g) = 0.091 mW/g

Maximum value of SAR (measured) = 0.156 mW/g

SCN/92490/024: Tilt Left PCS CH661

Date: 18/03/2013

DUT: Sony Gaga Anna; Type: Gaga Anna; Serial: PM-0400-BV



Communication System: PCS 1900; Frequency: 1880 MHz; Duty Cycle: 1:8.3

Medium: 1900 MHz HSL Medium parameters used (interpolated): $f = 1880$ MHz; $\sigma = 1.41$ mho/m; $\epsilon_r = 39$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1528; ConvF(4.92, 4.92, 4.92); Calibrated: 26/07/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn432; Calibrated: 02/05/2012
- Phantom: SAM 12b (Site 57); Type: SAM 4.0; Serial: TP:1031
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 145

Tilt Left - Middle/Area Scan (71x121x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.071 mW/g

Tilt Left - Middle/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 5.12 V/m; Power Drift = -0.097 dB

Peak SAR (extrapolated) = 0.085 W/kg

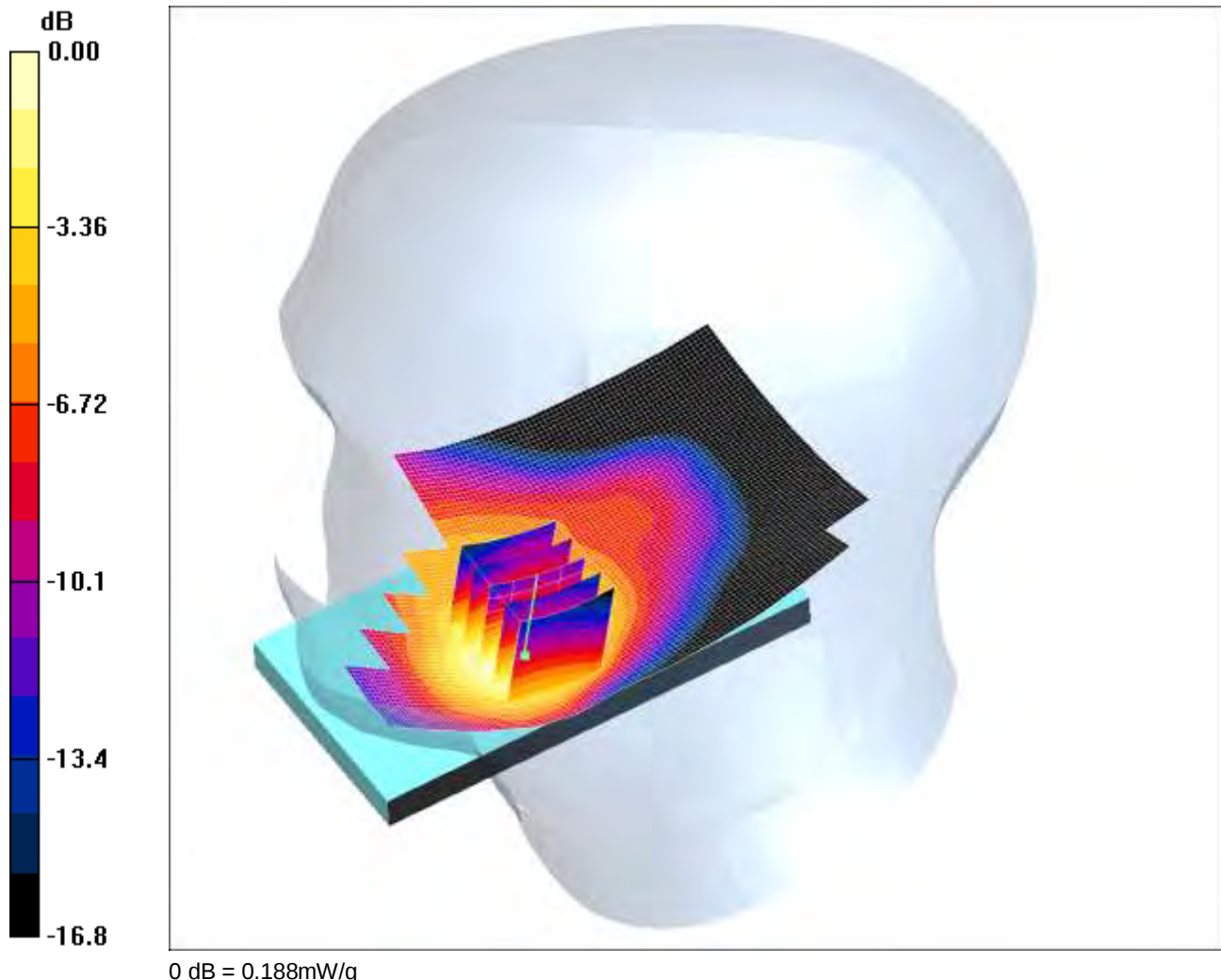
SAR(1 g) = 0.060 mW/g; SAR(10 g) = 0.039 mW/g

Maximum value of SAR (measured) = 0.064 mW/g

SCN/92490/025: Touch Right PCS CH661

Date: 18/03/2013

DUT: Sony Gaga Anna; Type: Gaga Anna; Serial: PM-0400-BV



0 dB = 0.188mW/g

Communication System: PCS 1900; Frequency: 1880 MHz; Duty Cycle: 1:8.3

Medium: 1900 MHz HSL Medium parameters used (interpolated): $f = 1880$ MHz; $\sigma = 1.41$ mho/m; $\epsilon_r = 39$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1528; ConvF(4.92, 4.92, 4.92); Calibrated: 26/07/2012

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn432; Calibrated: 02/05/2012

- Phantom: SAM 12b (Site 57); Type: SAM 4.0; Serial: TP:1031

- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 145

Touch Right - Middle 2/Area Scan (71x121x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.201 mW/g

Touch Right - Middle 2/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 2.85 V/m; Power Drift = 0.089 dB

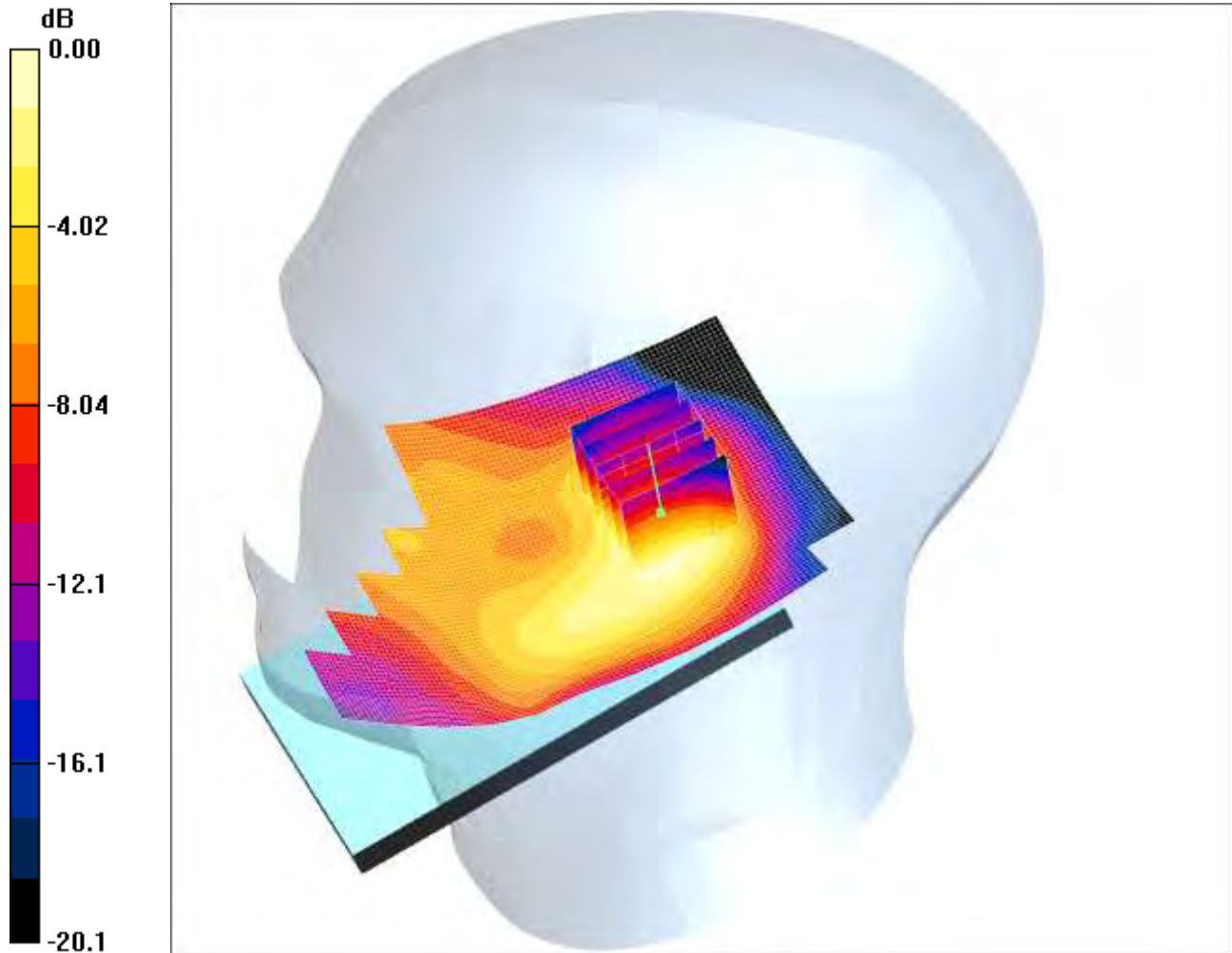
Peak SAR (extrapolated) = 0.247 W/kg

SAR(1 g) = 0.171 mW/g; SAR(10 g) = 0.105 mW/g

Maximum value of SAR (measured) = 0.188 mW/g

SCN/92490/026: Tilt Right PCS CH661

Date: 18/03/2013



0 dB = 0.067mW/g

Communication System: PCS 1900; Frequency: 1880 MHz; Duty Cycle: 1:8.3

Medium: 1900 MHz HSL Medium parameters used (interpolated): $f = 1880$ MHz; $\sigma = 1.41$ mho/m; $\epsilon_r = 39$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1528; ConvF(4.92, 4.92, 4.92); Calibrated: 26/07/2012

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn432; Calibrated: 02/05/2012

- Phantom: SAM 12b (Site 57); Type: SAM 4.0; Serial: TP:1031

- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 145

Tilt Right - Middle 2/Area Scan (71x121x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.066 mW/g

Tilt Right - Middle 2/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 5.43 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 0.094 W/kg

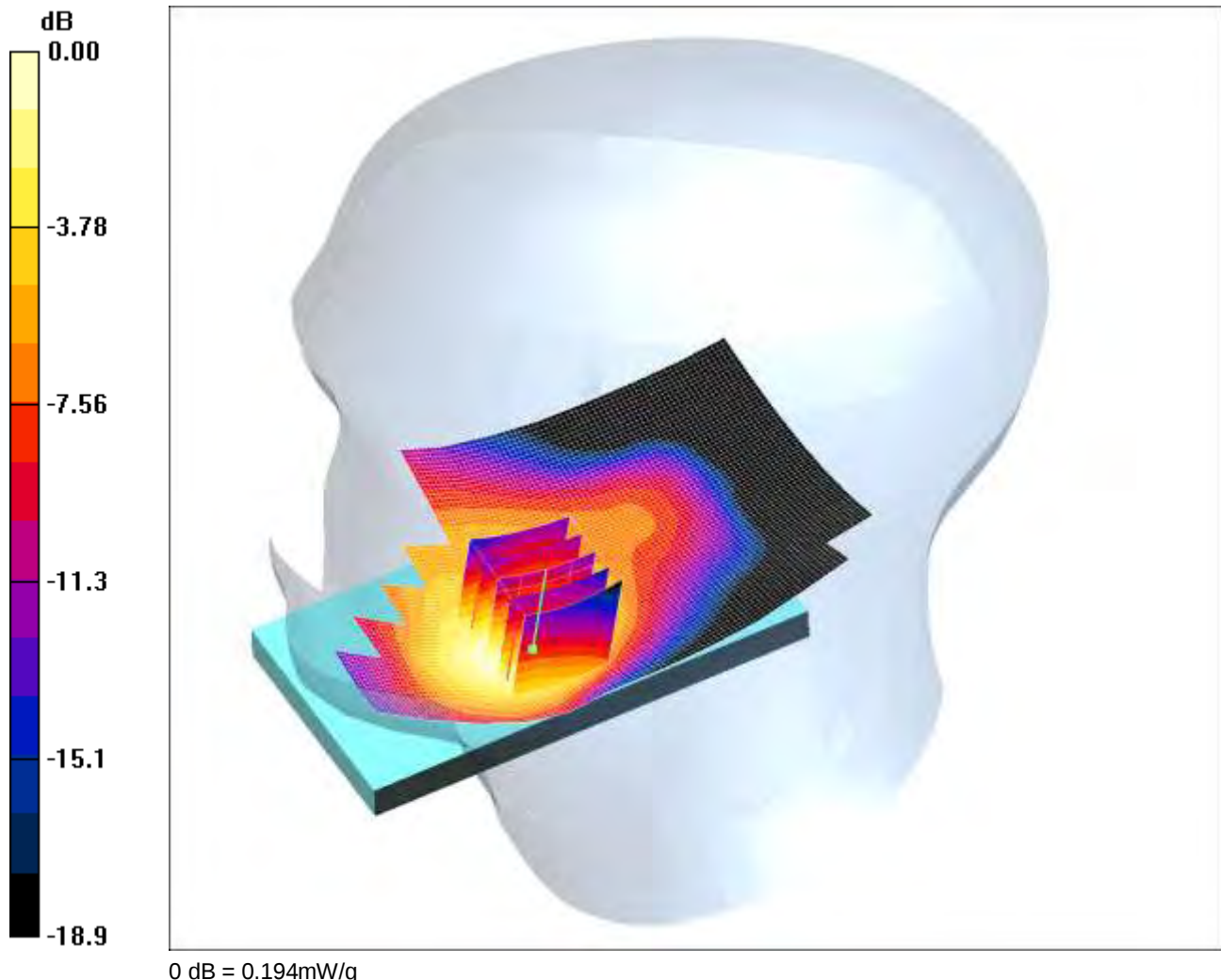
SAR(1 g) = 0.061 mW/g; SAR(10 g) = 0.037 mW/g

Maximum value of SAR (measured) = 0.067 mW/g

SCN/92490/027: Touch Right PCS CH512

Date: 18/03/2013

DUT: Sony Gaga Anna; Type: Gaga Anna; Serial: PM-0400-BV



Communication System: PCS 1900; Frequency: 1850.2 MHz; Duty Cycle: 1:8.3

Medium: 1900 MHz HSL Medium parameters used (interpolated): $f = 1850.2$ MHz; $\sigma = 1.38$ mho/m; $\epsilon_r = 39.1$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1528; ConvF(4.92, 4.92, 4.92); Calibrated: 26/07/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn432; Calibrated: 02/05/2012
- Phantom: SAM 12b (Site 57); Type: SAM 4.0; Serial: TP:1031
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 145

Touch Right - Low/Area Scan (71x121x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.198 mW/g

Touch Right - Low/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 2.62 V/m; Power Drift = 0.142 dB

Peak SAR (extrapolated) = 0.250 W/kg

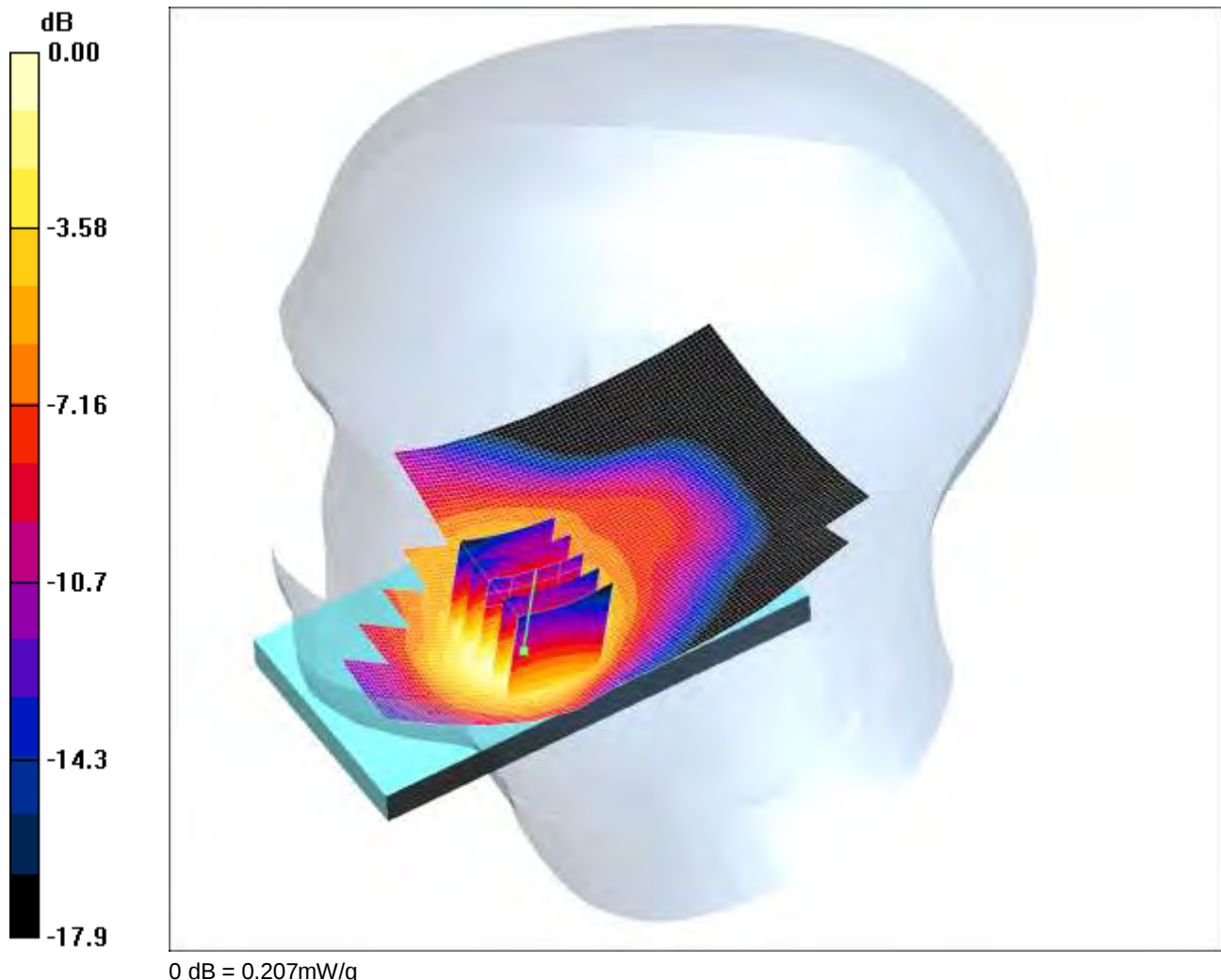
SAR(1 g) = 0.176 mW/g; SAR(10 g) = 0.108 mW/g

Maximum value of SAR (measured) = 0.194 mW/g

SCN/92490/028: Touch Right PCS CH810

Date: 18/03/2013

DUT: Sony Gaga Anna; Type: Gaga Anna; Serial: PM-0400-BV



Communication System: PCS 1900; Frequency: 1909.8 MHz; Duty Cycle: 1:8.3

Medium: 1900 MHz HSL Medium parameters used (interpolated): $f = 1909.8$ MHz; $\sigma = 1.44$ mho/m; $\epsilon_r = 38.9$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1528; ConvF(4.92, 4.92, 4.92); Calibrated: 26/07/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn432; Calibrated: 02/05/2012
- Phantom: SAM 12b (Site 57); Type: SAM 4.0; Serial: TP:1031
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 145

Touch Right - High/Area Scan (71x121x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.214 mW/g

Touch Right - High/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 2.99 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 0.281 W/kg

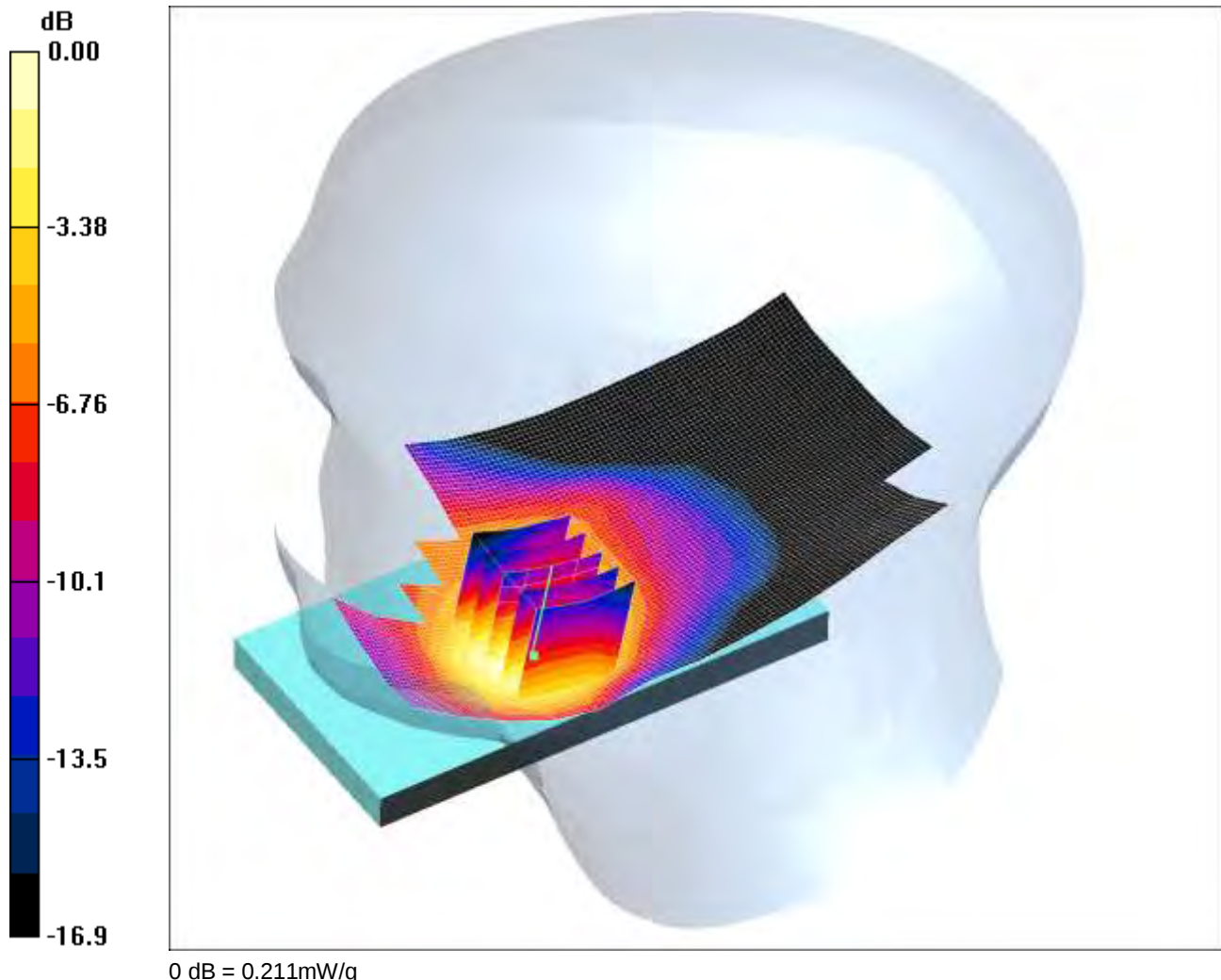
SAR(1 g) = 0.189 mW/g; SAR(10 g) = 0.113 mW/g

Maximum value of SAR (measured) = 0.207 mW/g

SCN/92490/029: Touch Right Antenna Extended PCS CH810

Date: 19/03/2013

DUT: Sony Gaga Anna; Type: Gaga Anna; Serial: PM-0400-BV



Communication System: PCS 1900; Frequency: 1909.8 MHz; Duty Cycle: 1:8.3

Medium: 1900 MHz HSL Medium parameters used (interpolated): $f = 1909.8$ MHz; $\sigma = 1.44$ mho/m; $\epsilon_r = 38.9$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1528; ConvF(4.92, 4.92, 4.92); Calibrated: 26/07/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn432; Calibrated: 02/05/2012
- Phantom: SAM 12b (Site 57); Type: SAM 4.0; Serial: TP:1031
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 145

Touch Right Antenna Extended - High 2/Area Scan (71x131x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.225 mW/g

Touch Right Antenna Extended - High 2/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 2.39 V/m; Power Drift = -0.179 dB

Peak SAR (extrapolated) = 0.292 W/kg

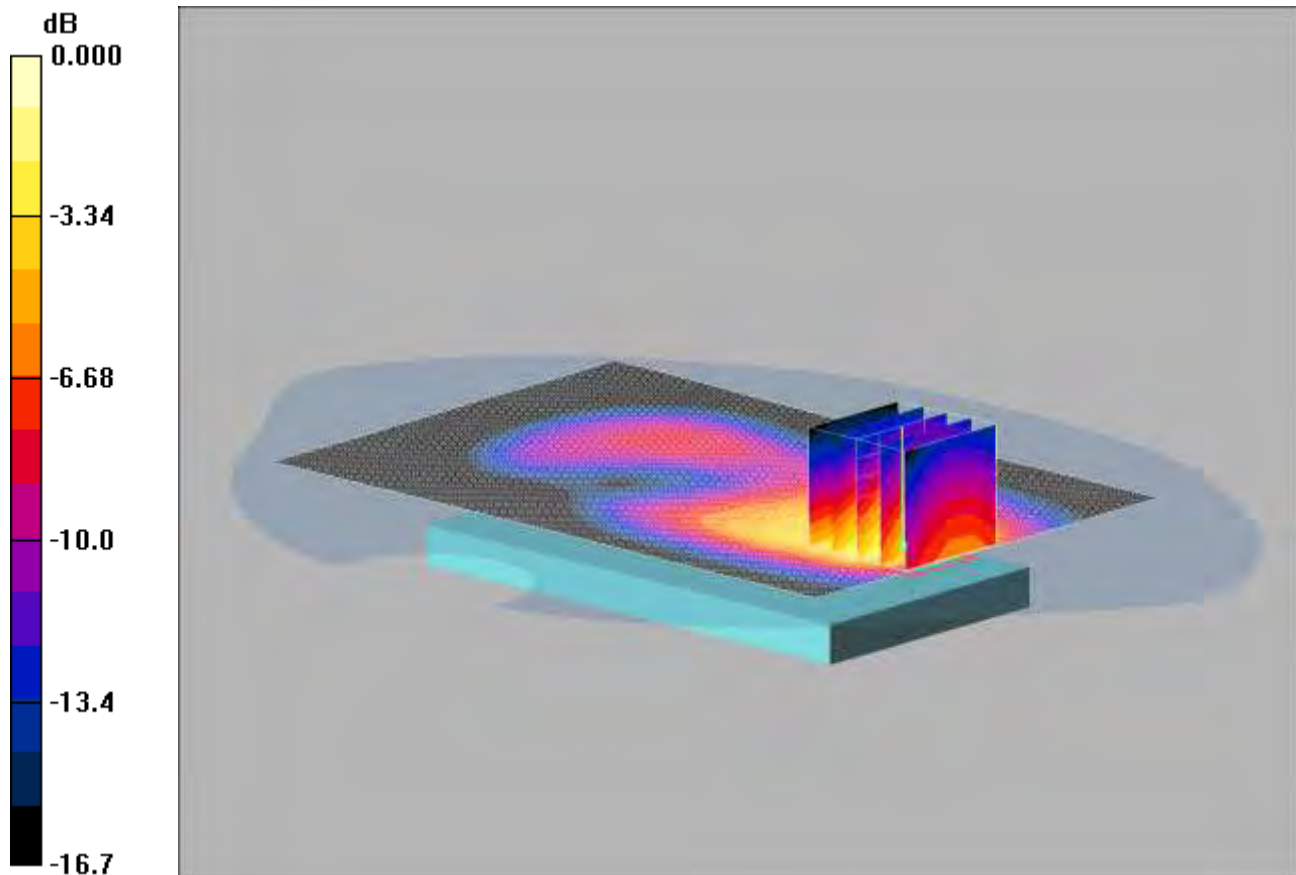
SAR(1 g) = 0.202 mW/g; SAR(10 g) = 0.123 mW/g

Maximum value of SAR (measured) = 0.211 mW/g

SCN/92490/030: Front of EUT Facing Phantom GPRS CH661

Date: 19/03/2013

DUT: Sony Gaga Anna; Type: Gaga Anna; Serial: PM-0400-BV



0 dB = 0.764mW/g

Communication System: GPRS 1900 4Tx; Frequency: 1880 MHz; Duty Cycle: 1:2

Medium: 1900 MHz MSL Medium parameters used (interpolated): $f = 1880$ MHz; $\sigma = 1.47$ mho/m; $\epsilon_r = 51.3$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(4.69, 4.69, 4.69); Calibrated: 11/05/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn431; Calibrated: 20/09/2012
- Phantom: SAM 12b (Site 56); Type: SAM 4.0; Serial: TP:1020
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Front of EUT Facing Phantom - Middle/Area Scan (81x121x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.724 mW/g

Front of EUT Facing Phantom - Middle/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 5.90 V/m; Power Drift = -0.170 dB

Peak SAR (extrapolated) = 1.06 W/kg

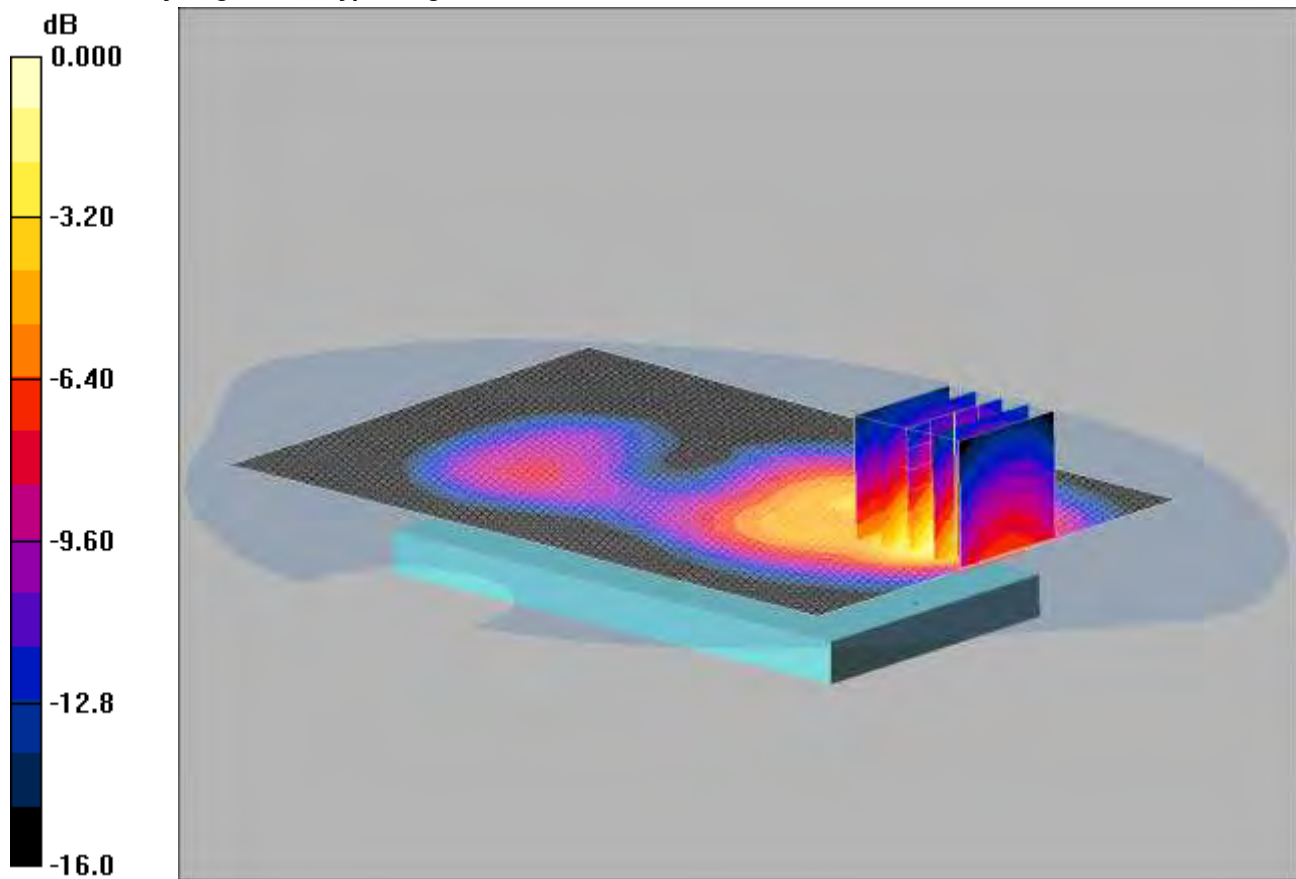
SAR(1 g) = 0.672 mW/g; SAR(10 g) = 0.364 mW/g

Maximum value of SAR (measured) = 0.764 mW/g

SCN/92490/031: Back of EUT Facing Phantom GPRS CH661

Date: 19/03/2013

DUT: Sony Gaga Anna; Type: Gaga Anna; Serial: PM-0400-BV



0 dB = 0.911mW/g

Communication System: GPRS 1900 4Tx; Frequency: 1880 MHz; Duty Cycle: 1:2

Medium: 1900 MHz MSL Medium parameters used (interpolated): $f = 1880$ MHz; $\sigma = 1.47$ mho/m; $\epsilon_r = 51.3$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(4.69, 4.69, 4.69); Calibrated: 11/05/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn431; Calibrated: 20/09/2012
- Phantom: SAM 12b (Site 56); Type: SAM 4.0; Serial: TP:1020
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Back of EUT Facing Phantom - Middle/Area Scan (81x121x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.908 mW/g

Back of EUT Facing Phantom - Middle/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 6.43 V/m; Power Drift = 0.138 dB

Peak SAR (extrapolated) = 1.25 W/kg

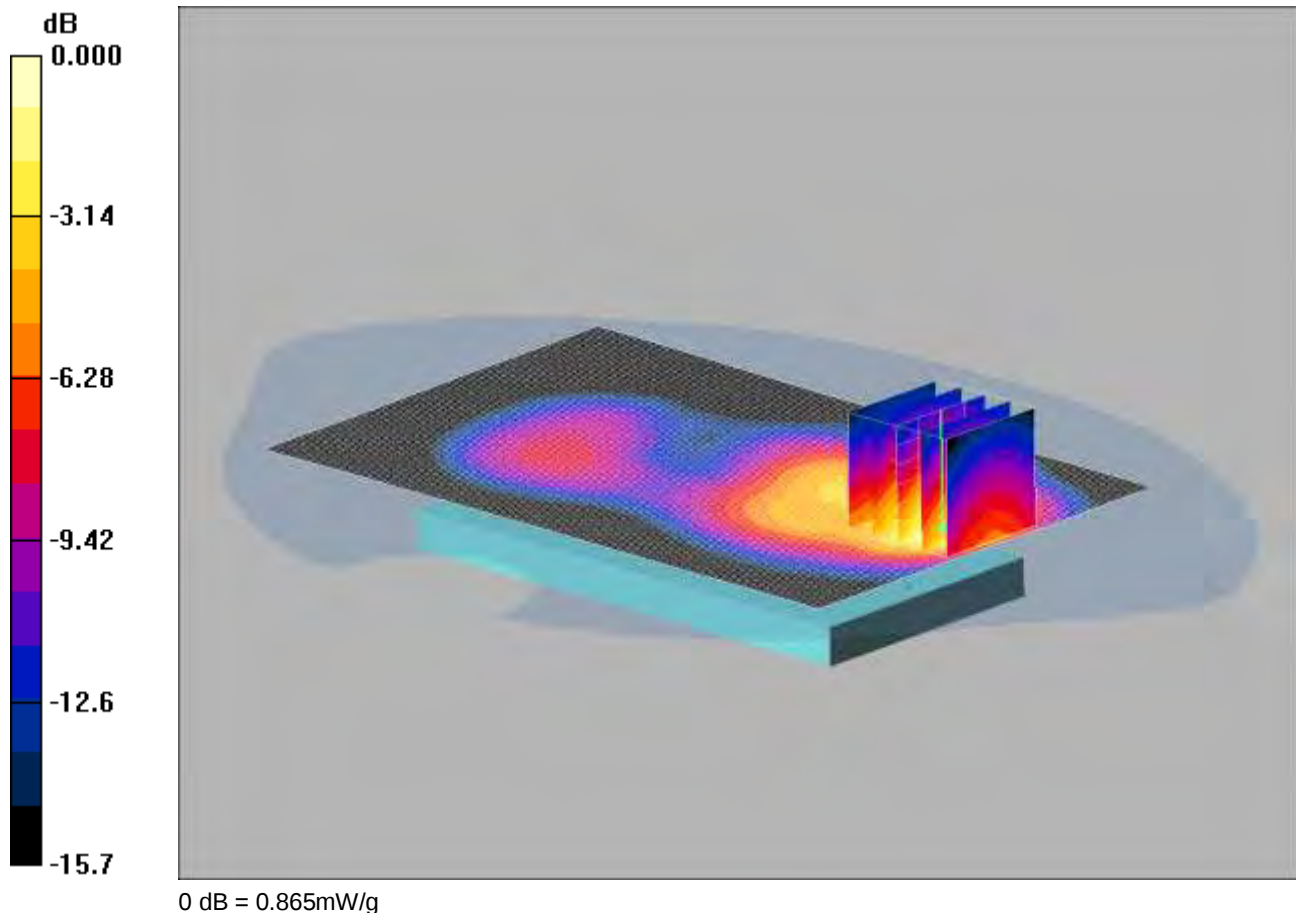
SAR(1 g) = 0.813 mW/g; SAR(10 g) = 0.455 mW/g

Maximum value of SAR (measured) = 0.911 mW/g

SCN/92490/032: Back of EUT Facing Phantom GPRS CH512

Date: 19/03/2013

DUT: Sony Gaga Anna; Type: Gaga Anna; Serial: PM-0400-BV



Communication System: GPRS 1900 4Tx; Frequency: 1850.2 MHz; Duty Cycle: 1:2

Medium: 1900 MHz MSL Medium parameters used (interpolated): $f = 1850.2$ MHz; $\sigma = 1.45$ mho/m; $\epsilon_r = 51.3$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(4.69, 4.69, 4.69); Calibrated: 11/05/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn431; Calibrated: 20/09/2012
- Phantom: SAM 12b (Site 56); Type: SAM 4.0; Serial: TP:1020
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Back of EUT Facing Phantom - Low/Area Scan (81x121x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.837 mW/g

Back of EUT Facing Phantom - Low/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 6.66 V/m; Power Drift = 0.051 dB

Peak SAR (extrapolated) = 1.16 W/kg

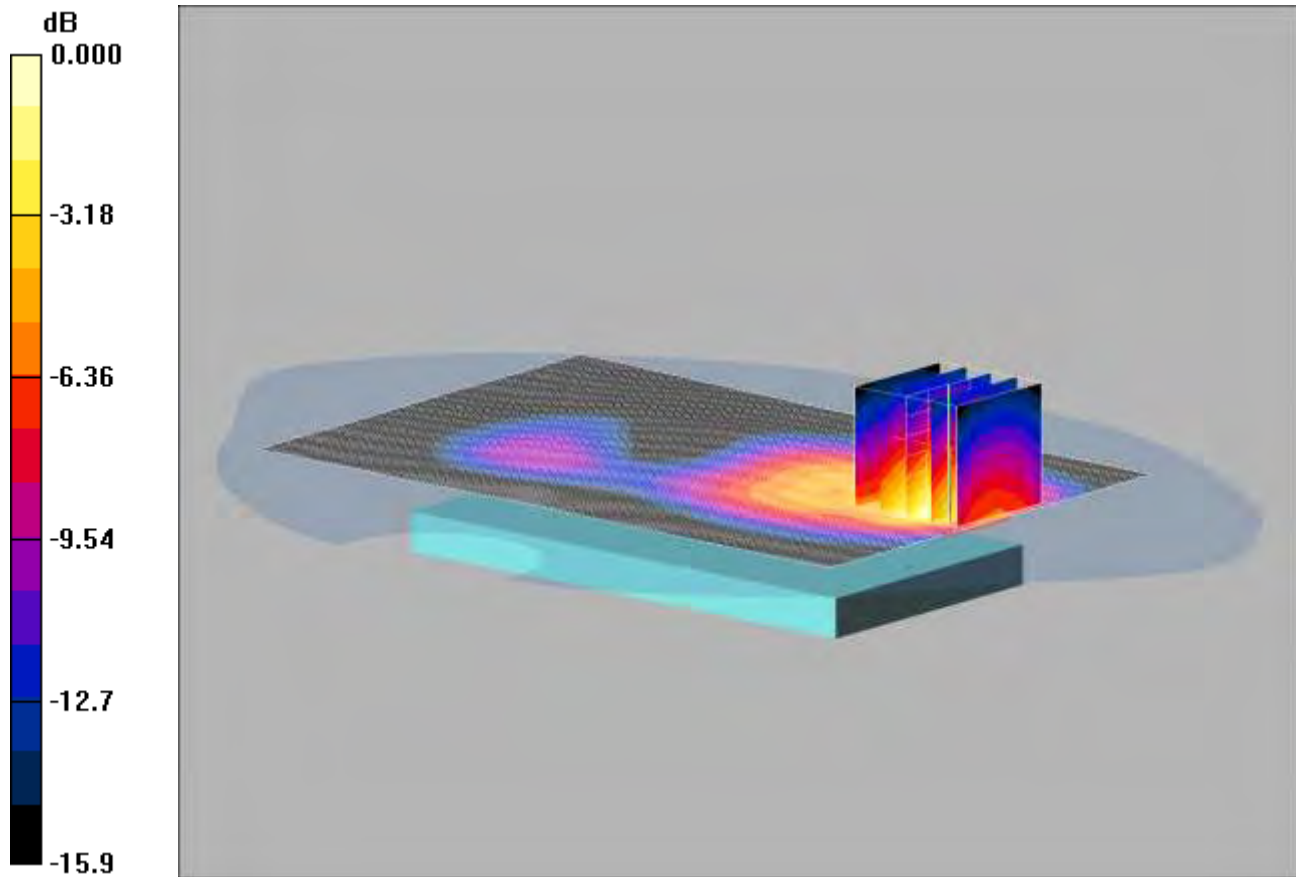
SAR(1 g) = 0.759 mW/g; SAR(10 g) = 0.429 mW/g

Maximum value of SAR (measured) = 0.865 mW/g

SCN/92490/033: Back of EUT Facing Phantom GPRS CH810

Date: 19/03/2013

DUT: Sony Gaga Anna; Type: Gaga Anna; Serial: PM-0400-BV



0 dB = 0.991mW/g

Communication System: GPRS 1900 4Tx; Frequency: 1909.8 MHz; Duty Cycle: 1:2

Medium: 1900 MHz MSL Medium parameters used (interpolated): $f = 1909.8$ MHz; $\sigma = 1.5$ mho/m; $\epsilon_r = 51.2$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(4.69, 4.69, 4.69); Calibrated: 11/05/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn431; Calibrated: 20/09/2012
- Phantom: SAM 12b (Site 56); Type: SAM 4.0; Serial: TP:1020
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Back of EUT Facing Phantom - High/Area Scan (81x121x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.976 mW/g

Back of EUT Facing Phantom - High/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 6.86 V/m; Power Drift = 0.127 dB

Peak SAR (extrapolated) = 1.35 W/kg

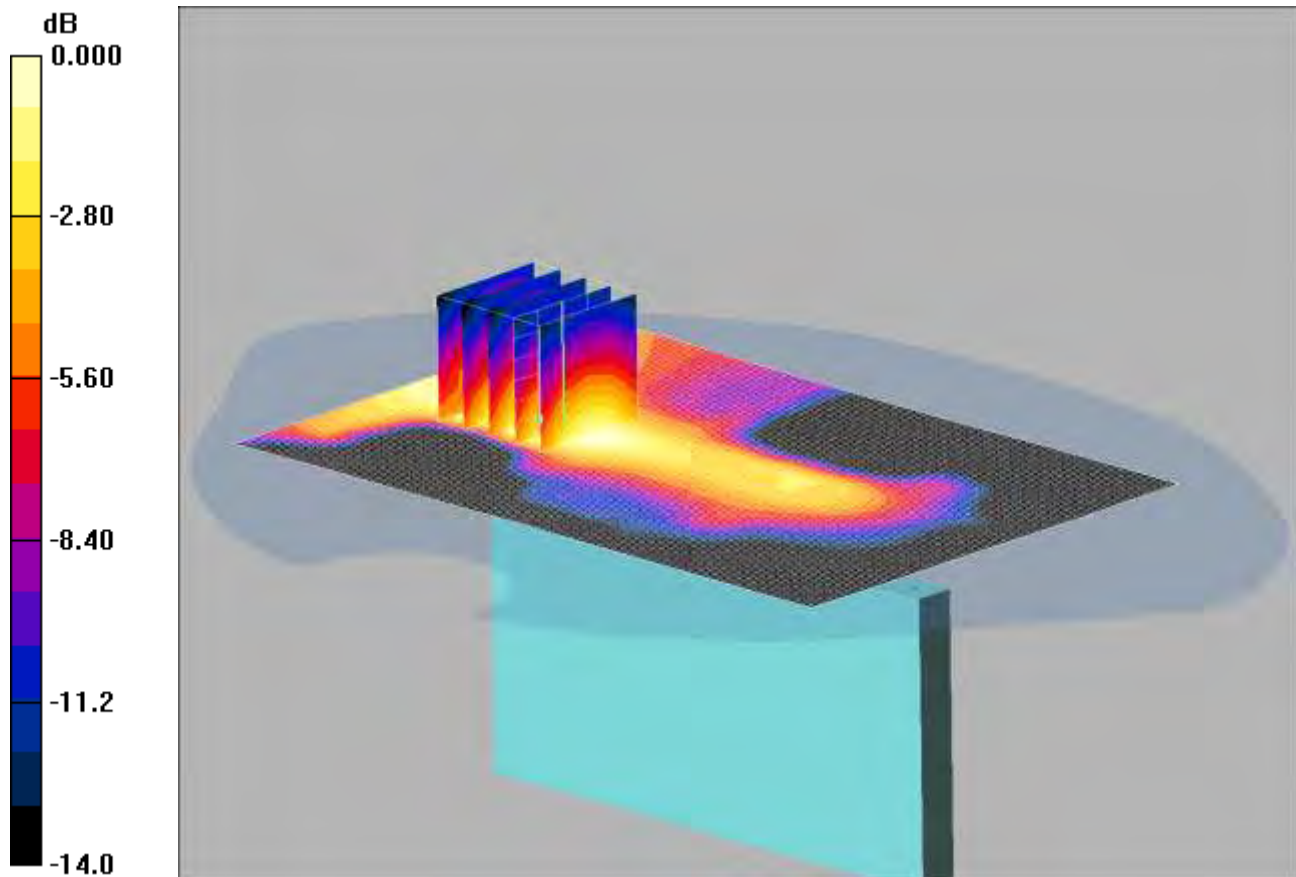
SAR(1 g) = 0.863 mW/g; SAR(10 g) = 0.473 mW/g

Maximum value of SAR (measured) = 0.991 mW/g

SCN/92490/034: Left Hand Side of EUT Facing Phantom GPRS CH661

Date: 19/03/2013

DUT: Sony Gaga Anna; Type: Gaga Anna; Serial: PM-0400-BV



0 dB = 0.097mW/g

Communication System: GPRS 1900 4Tx; Frequency: 1880 MHz; Duty Cycle: 1:2

Medium: 1900 MHz MSL Medium parameters used (interpolated): $f = 1880$ MHz; $\sigma = 1.47$ mho/m; $\epsilon_r = 51.3$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(4.69, 4.69, 4.69); Calibrated: 11/05/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn431; Calibrated: 20/09/2012
- Phantom: SAM 12b (Site 56); Type: SAM 4.0; Serial: TP:1020
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Left Hand Side of EUT Facing Phantom - Middle/Area Scan (81x121x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.101 mW/g

Left Hand Side of EUT Facing Phantom - Middle/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 5.91 V/m; Power Drift = 0.027 dB

Peak SAR (extrapolated) = 0.128 W/kg

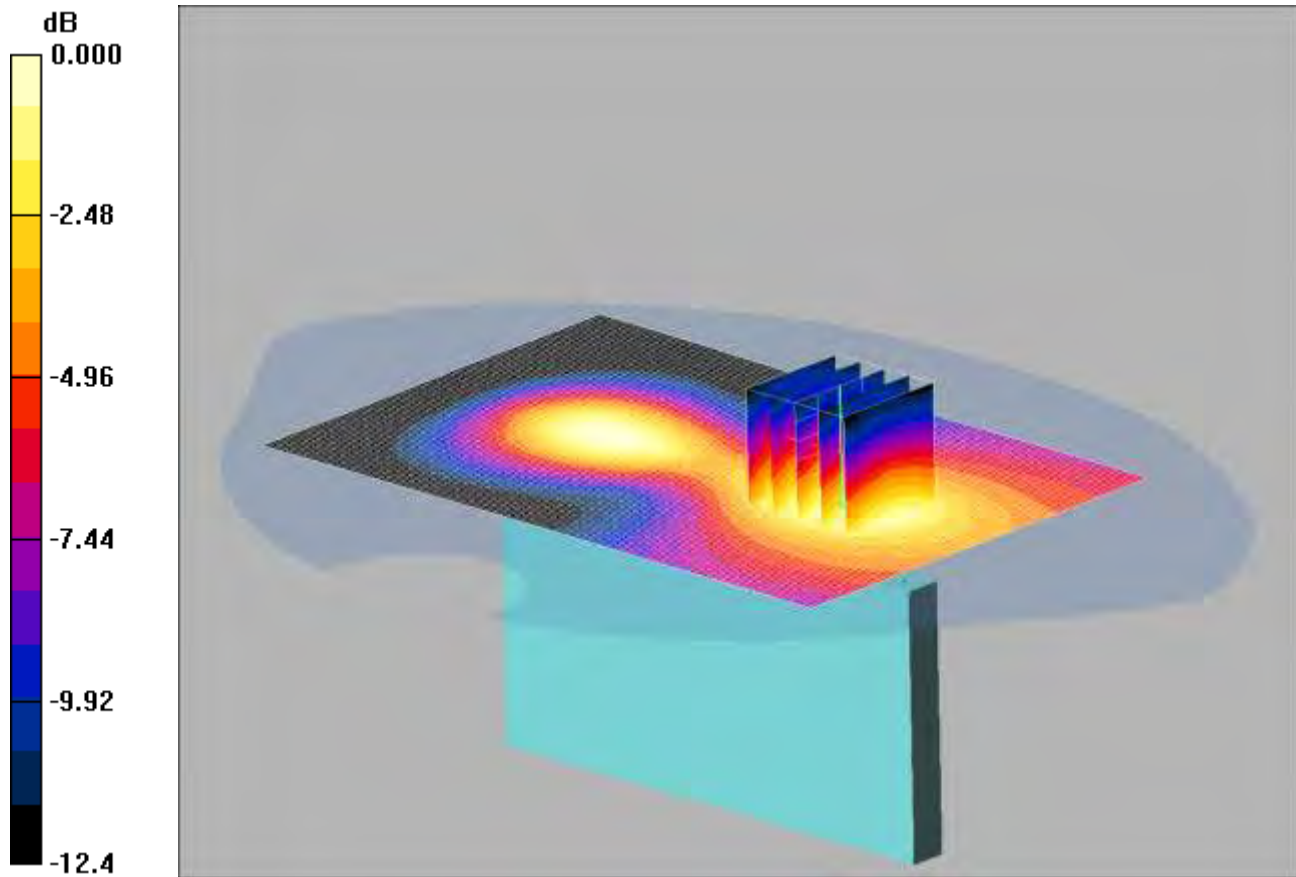
SAR(1 g) = 0.086 mW/g; SAR(10 g) = 0.053 mW/g

Maximum value of SAR (measured) = 0.097 mW/g

SCN/92490/035: Right Hand Side of EUT Facing Phantom GPRS CH661

Date: 19/03/2013

DUT: Sony Gaga Anna; Type: Gaga Anna; Serial: PM-0400-BV



0 dB = 0.107mW/g

Communication System: GPRS 1900 4Tx; Frequency: 1880 MHz; Duty Cycle: 1:2

Medium: 1900 MHz MSL Medium parameters used (interpolated): $f = 1880$ MHz; $\sigma = 1.47$ mho/m; $\epsilon_r = 51.3$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(4.69, 4.69, 4.69); Calibrated: 11/05/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn431; Calibrated: 20/09/2012
- Phantom: SAM 12b (Site 56); Type: SAM 4.0; Serial: TP:1020
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Right Hand Side of EUT Facing Phantom - Middle/Area Scan (81x121x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.106 mW/g

Right Hand Side of EUT Facing Phantom - Middle/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 5.98 V/m; Power Drift = 0.173 dB

Peak SAR (extrapolated) = 0.141 W/kg

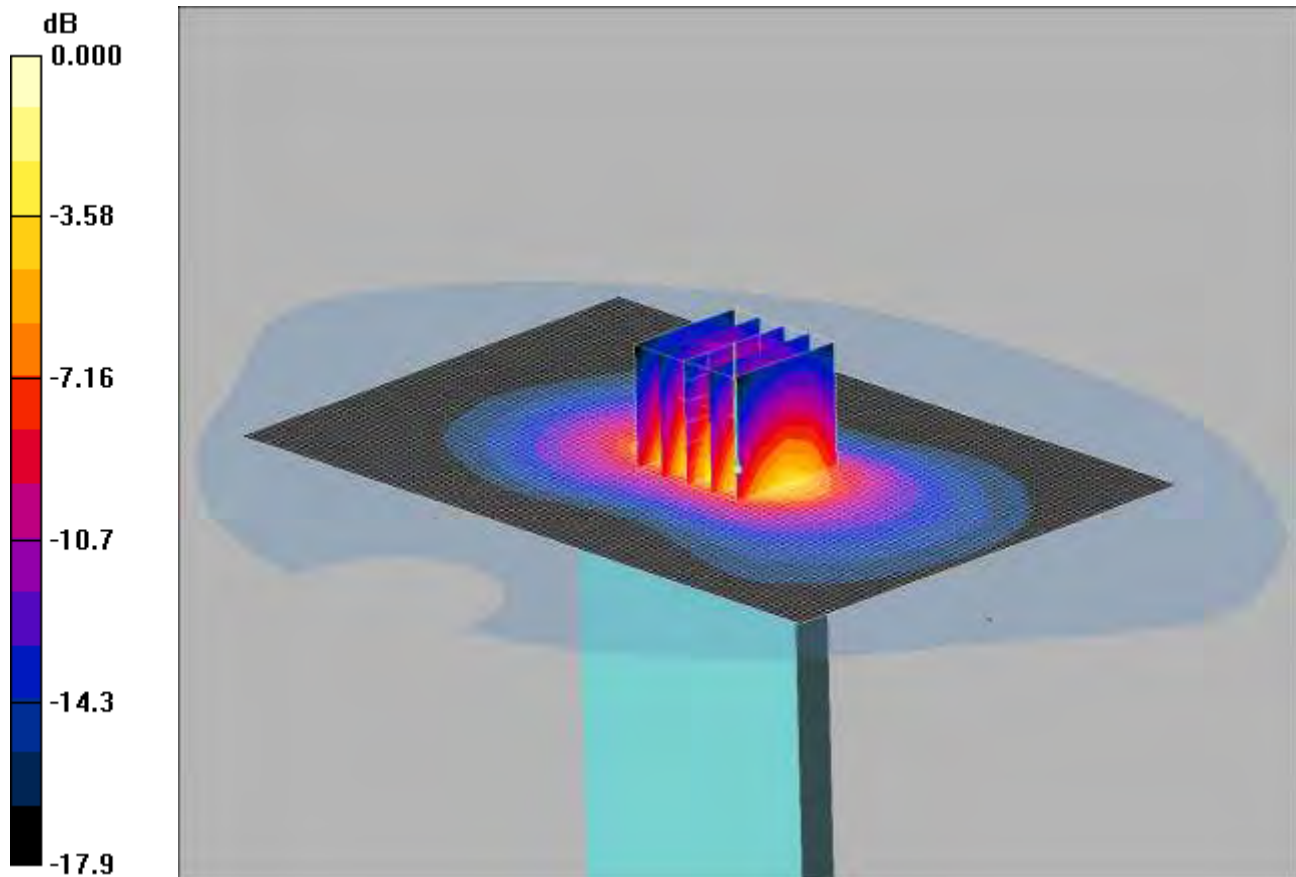
SAR(1 g) = 0.099 mW/g; SAR(10 g) = 0.064 mW/g

Maximum value of SAR (measured) = 0.107 mW/g

SCN/92490/036: Bottom of EUT Facing Phantom GPRS CH661

Date: 19/03/2013

DUT: Sony Gaga Anna; Type: Gaga Anna; Serial: PM-0400-BV



0 dB = 1.02mW/g

Communication System: GPRS 1900 4Tx; Frequency: 1880 MHz; Duty Cycle: 1:2

Medium: 1900 MHz MSL Medium parameters used (interpolated): $f = 1880$ MHz; $\sigma = 1.47$ mho/m; $\epsilon_r = 51.3$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(4.69, 4.69, 4.69); Calibrated: 11/05/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn431; Calibrated: 20/09/2012
- Phantom: SAM 12b (Site 56); Type: SAM 4.0; Serial: TP:1020
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Bottom of EUT Facing Phantom - Middle/Area Scan (81x121x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.978 mW/g

Bottom of EUT Facing Phantom - Middle/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 26.6 V/m; Power Drift = 0.017 dB

Peak SAR (extrapolated) = 1.44 W/kg

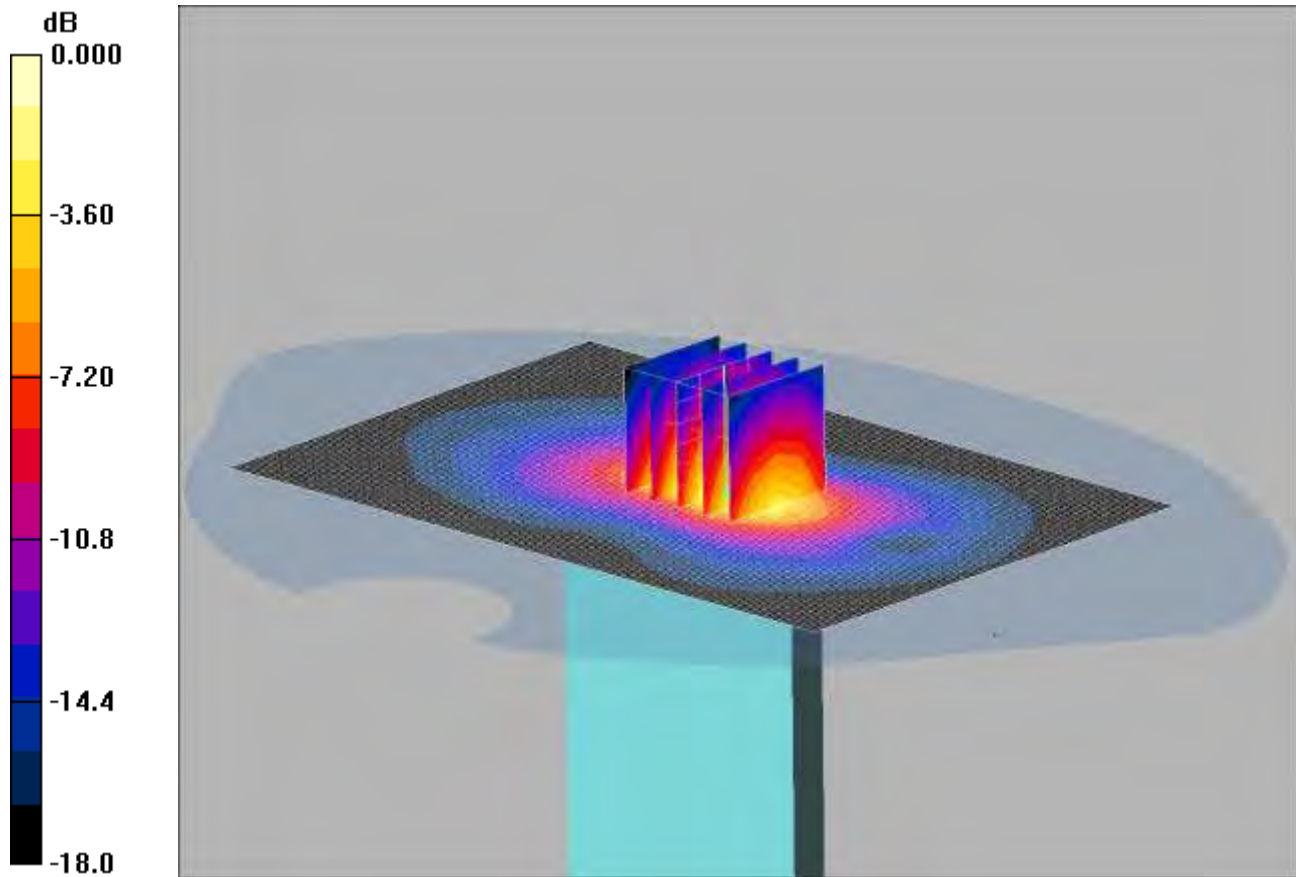
SAR(1 g) = 0.878 mW/g; SAR(10 g) = 0.453 mW/g

Maximum value of SAR (measured) = 1.02 mW/g

SCN/92490/037: Bottom of EUT Facing Phantom GPRS CH512

Date: 19/03/2013

DUT: Sony Gaga Anna; Type: Gaga Anna; Serial: PM-0400-BV



0 dB = 0.883mW/g

Communication System: GPRS 1900 4Tx; Frequency: 1850.2 MHz; Duty Cycle: 1:2

Medium: 1900 MHz MSL Medium parameters used (interpolated): $f = 1850.2$ MHz; $\sigma = 1.45$ mho/m; $\epsilon_r = 51.3$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(4.69, 4.69, 4.69); Calibrated: 11/05/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn431; Calibrated: 20/09/2012
- Phantom: SAM 12b (Site 56); Type: SAM 4.0; Serial: TP:1020
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Bottom of EUT Facing Phantom - Low/Area Scan (81x121x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.861 mW/g

Bottom of EUT Facing Phantom - Low/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 24.9 V/m; Power Drift = -0.034 dB

Peak SAR (extrapolated) = 1.31 W/kg

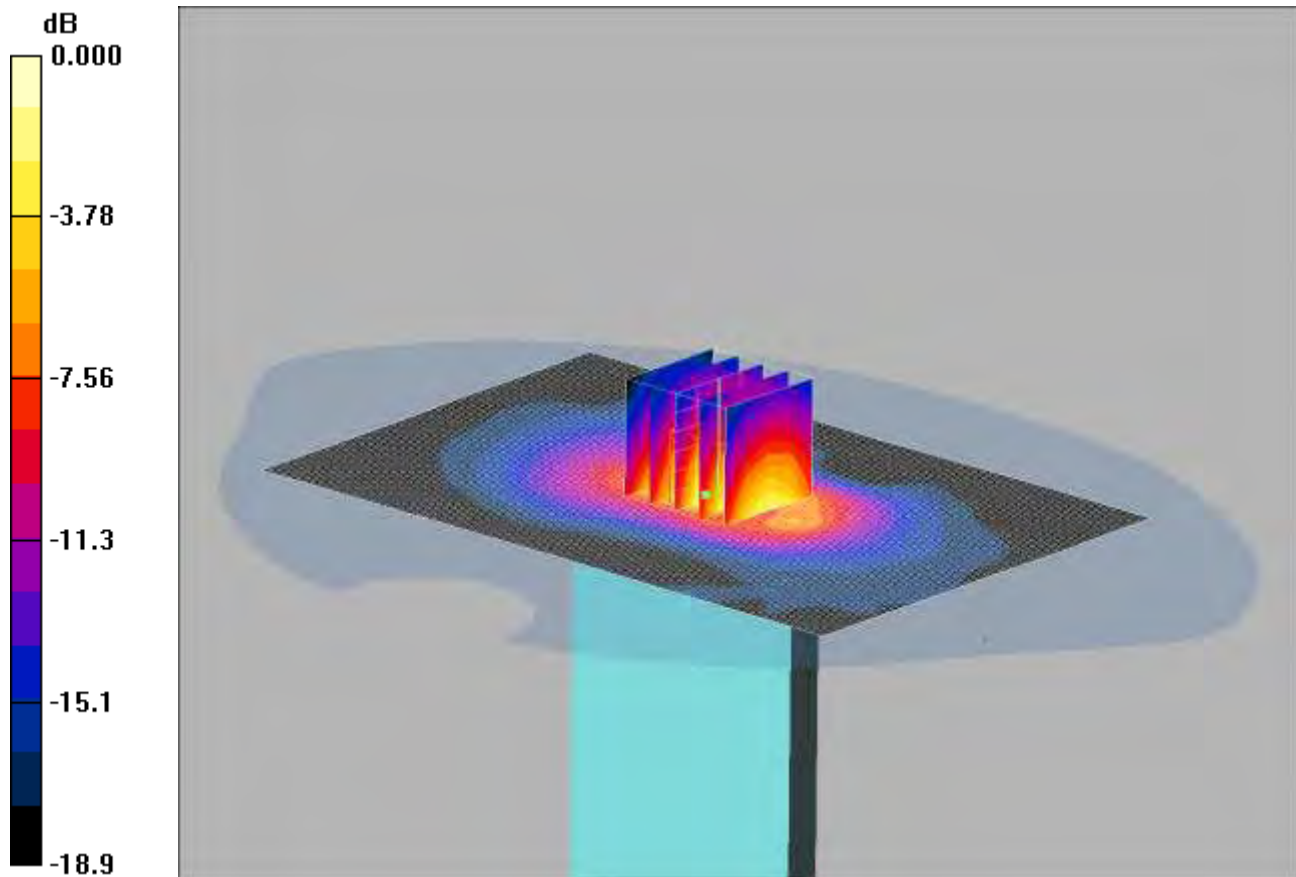
SAR(1 g) = 0.769 mW/g; SAR(10 g) = 0.395 mW/g

Maximum value of SAR (measured) = 0.883 mW/g

SCN/92490/038: Bottom of EUT Facing Phantom GPRS CH810

Date: 19/03/2013

DUT: Sony Gaga Anna; Type: Gaga Anna; Serial: PM-0400-BV



0 dB = 1.09mW/g

Communication System: GPRS 1900 4Tx; Frequency: 1909.8 MHz; Duty Cycle: 1:2

Medium: 1900 MHz MSL Medium parameters used (interpolated): $f = 1909.8$ MHz; $\sigma = 1.5$ mho/m; $\epsilon_r = 51.2$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(4.69, 4.69, 4.69); Calibrated: 11/05/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn431; Calibrated: 20/09/2012
- Phantom: SAM 12b (Site 56); Type: SAM 4.0; Serial: TP:1020
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Bottom of EUT Facing Phantom - High/Area Scan (81x121x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.982 mW/g

Bottom of EUT Facing Phantom - High/Zoom Scan (5x5x7) 2 (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 27.2 V/m; Power Drift = -0.117 dB

Peak SAR (extrapolated) = 1.68 W/kg

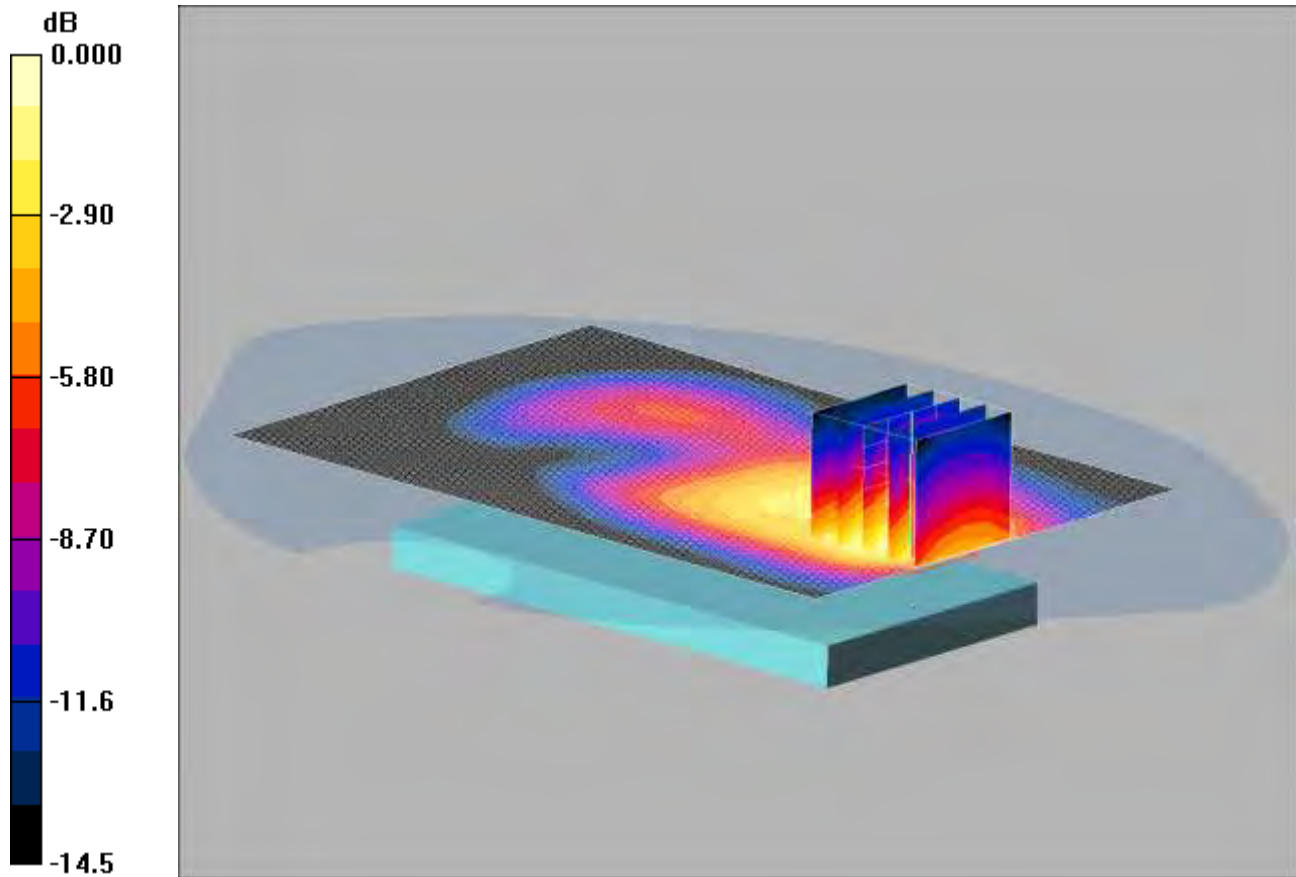
SAR(1 g) = 0.977 mW/g; SAR(10 g) = 0.500 mW/g

Maximum value of SAR (measured) = 1.09 mW/g

SCN/92490/039: Front of EUT Facing Phantom at 15mm PCS CH810

Date: 19/03/2013

DUT: Sony Gaga Anna; Type: Gaga Anna; Serial: PM-0400-BV



0 dB = 0.303mW/g

Communication System: PCS 1900; Frequency: 1909.8 MHz; Duty Cycle: 1:8.3

Medium: 1900 MHz MSL Medium parameters used (interpolated): $f = 1909.8$ MHz; $\sigma = 1.5$ mho/m; $\epsilon_r = 51.2$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(4.69, 4.69, 4.69); Calibrated: 11/05/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn431; Calibrated: 20/09/2012
- Phantom: SAM 12b (Site 56); Type: SAM 4.0; Serial: TP:1020
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Front of EUT Facing Phantom - High/Area Scan (81x121x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.294 mW/g

Front of EUT Facing Phantom - High/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 6.36 V/m; Power Drift = -0.175 dB

Peak SAR (extrapolated) = 0.424 W/kg

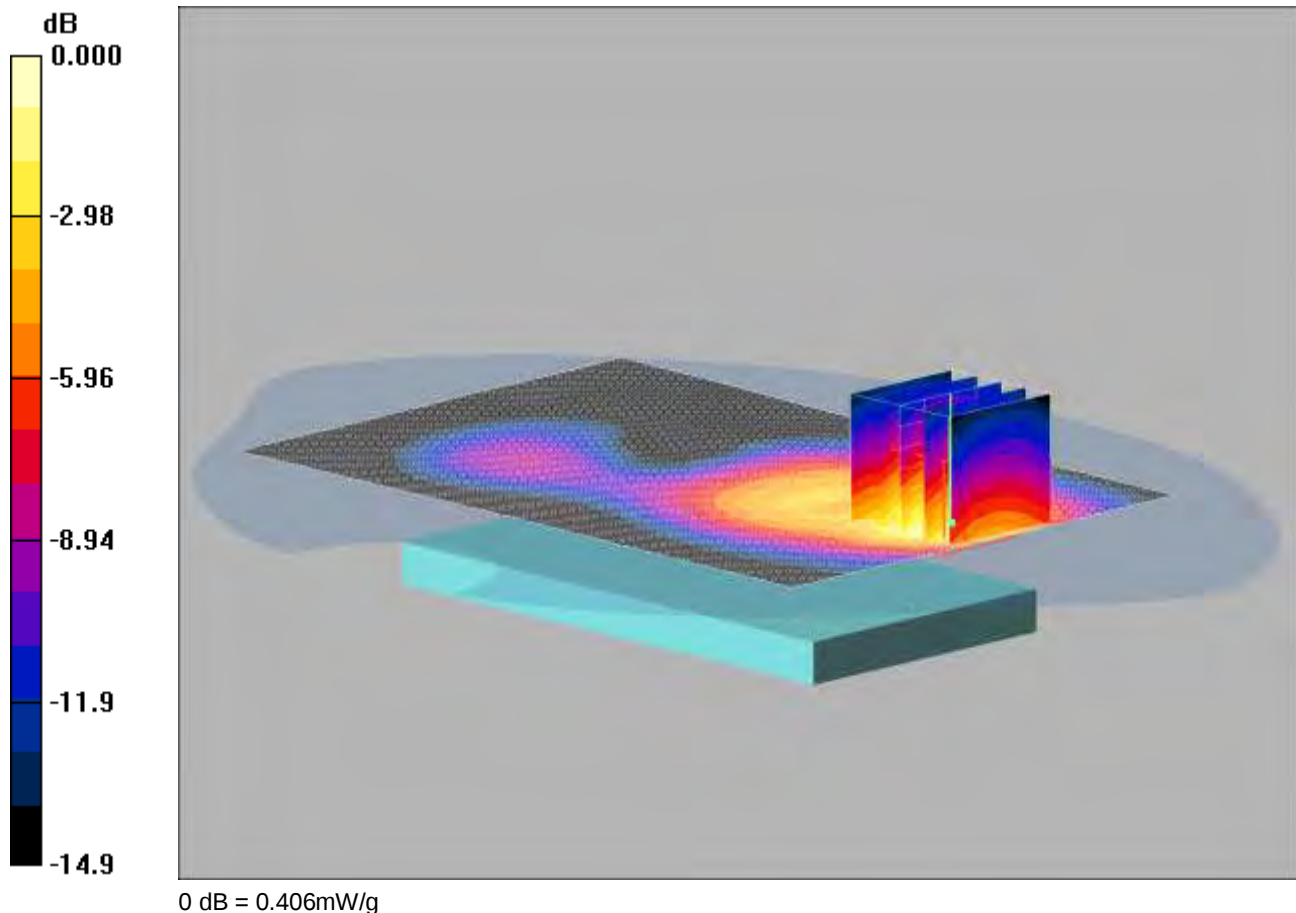
SAR(1 g) = 0.271 mW/g; SAR(10 g) = 0.158 mW/g

Maximum value of SAR (measured) = 0.303 mW/g

SCN/92490/040: Back of EUT Facing Phantom at 15mm PCS CH810

Date: 19/03/2013

DUT: Sony Gaga Anna; Type: Gaga Anna; Serial: PM-0400-BV



Communication System: PCS 1900; Frequency: 1909.8 MHz; Duty Cycle: 1:8.3

Medium: 1900 MHz MSL Medium parameters used (interpolated): $f = 1909.8$ MHz; $\sigma = 1.5$ mho/m; $\epsilon_r = 51.2$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(4.69, 4.69, 4.69); Calibrated: 11/05/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn431; Calibrated: 20/09/2012
- Phantom: SAM 12b (Site 56); Type: SAM 4.0; Serial: TP:1020
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Back of EUT Facing Phantom - High/Area Scan (81x121x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.405 mW/g

Back of EUT Facing Phantom - High/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 6.49 V/m; Power Drift = -0.032 dB

Peak SAR (extrapolated) = 0.549 W/kg

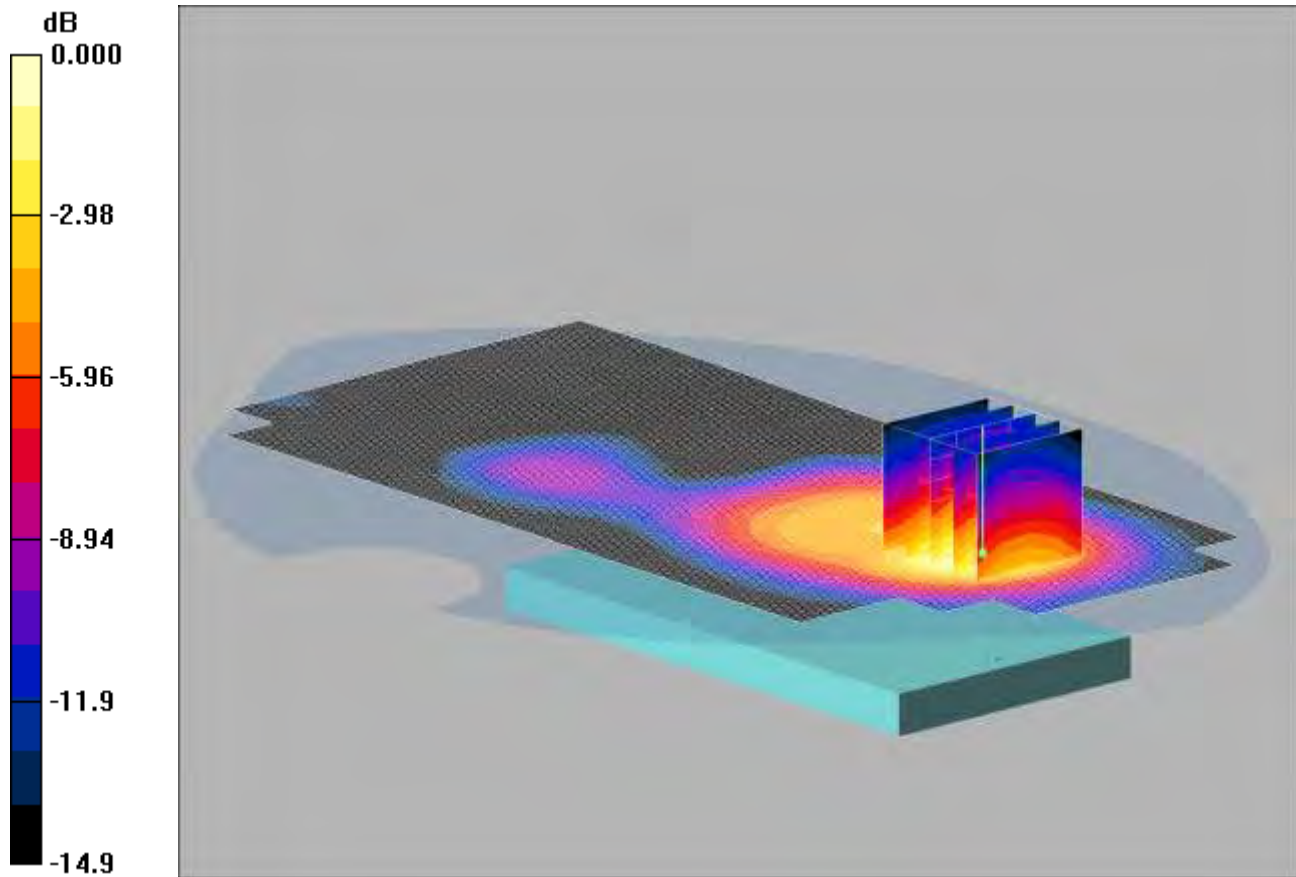
SAR(1 g) = 0.366 mW/g; SAR(10 g) = 0.215 mW/g

Maximum value of SAR (measured) = 0.406 mW/g

SCN/92490/041: Back of EUT Antenna Extended Facing Phantom at 15mm PCS CH810

Date: 19/03/2013

DUT: Sony Gaga Anna; Type: Gaga Anna; Serial: PM-0400-BV



0 dB = 0.401mW/g

Communication System: PCS 1900; Frequency: 1909.8 MHz; Duty Cycle: 1:8.3

Medium: 1900 MHz MSL Medium parameters used (interpolated): $f = 1909.8$ MHz; $\sigma = 1.5$ mho/m; $\epsilon_r = 51.2$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(4.69, 4.69, 4.69); Calibrated: 11/05/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn431; Calibrated: 20/09/2012
- Phantom: SAM 12b (Site 56); Type: SAM 4.0; Serial: TP:1020
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Back of EUT Facing Phantom - High/Area Scan (81x161x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.410 mW/g

Back of EUT Facing Phantom - High/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 3.50 V/m; Power Drift = -0.041 dB

Peak SAR (extrapolated) = 0.555 W/kg

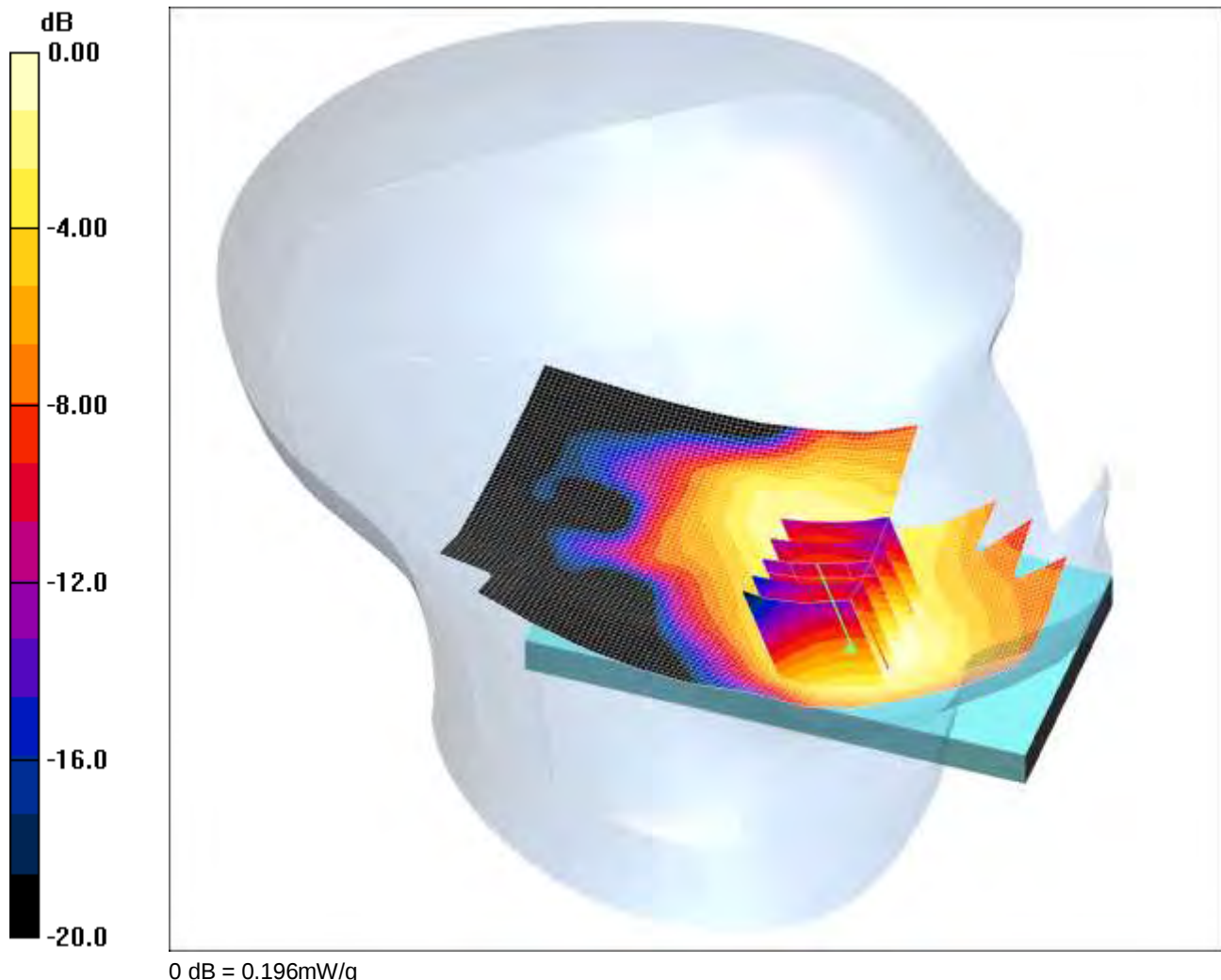
SAR(1 g) = 0.364 mW/g; SAR(10 g) = 0.213 mW/g

Maximum value of SAR (measured) = 0.401 mW/g

SCN/92490/042: Touch Left UMTS FDD2 CH9400

Date: 19/03/2013

DUT: Sony Gaga Anna; Type: Gaga Anna; Serial: PM-0400-BV



Communication System: UMTS-FDD 2; Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: 1900 MHz HSL Medium parameters used (interpolated): $f = 1880$ MHz; $\sigma = 1.41$ mho/m; $\epsilon_r = 39$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1528; ConvF(4.92, 4.92, 4.92); Calibrated: 26/07/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn432; Calibrated: 02/05/2012
- Phantom: SAM 12b (Site 57); Type: SAM 4.0; Serial: TP:1031
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 145

Touch Left - Middle 2/Area Scan (71x121x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.208 mW/g

Touch Left - Middle 2/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 2.89 V/m; Power Drift = 0.011 dB

Peak SAR (extrapolated) = 0.262 W/kg

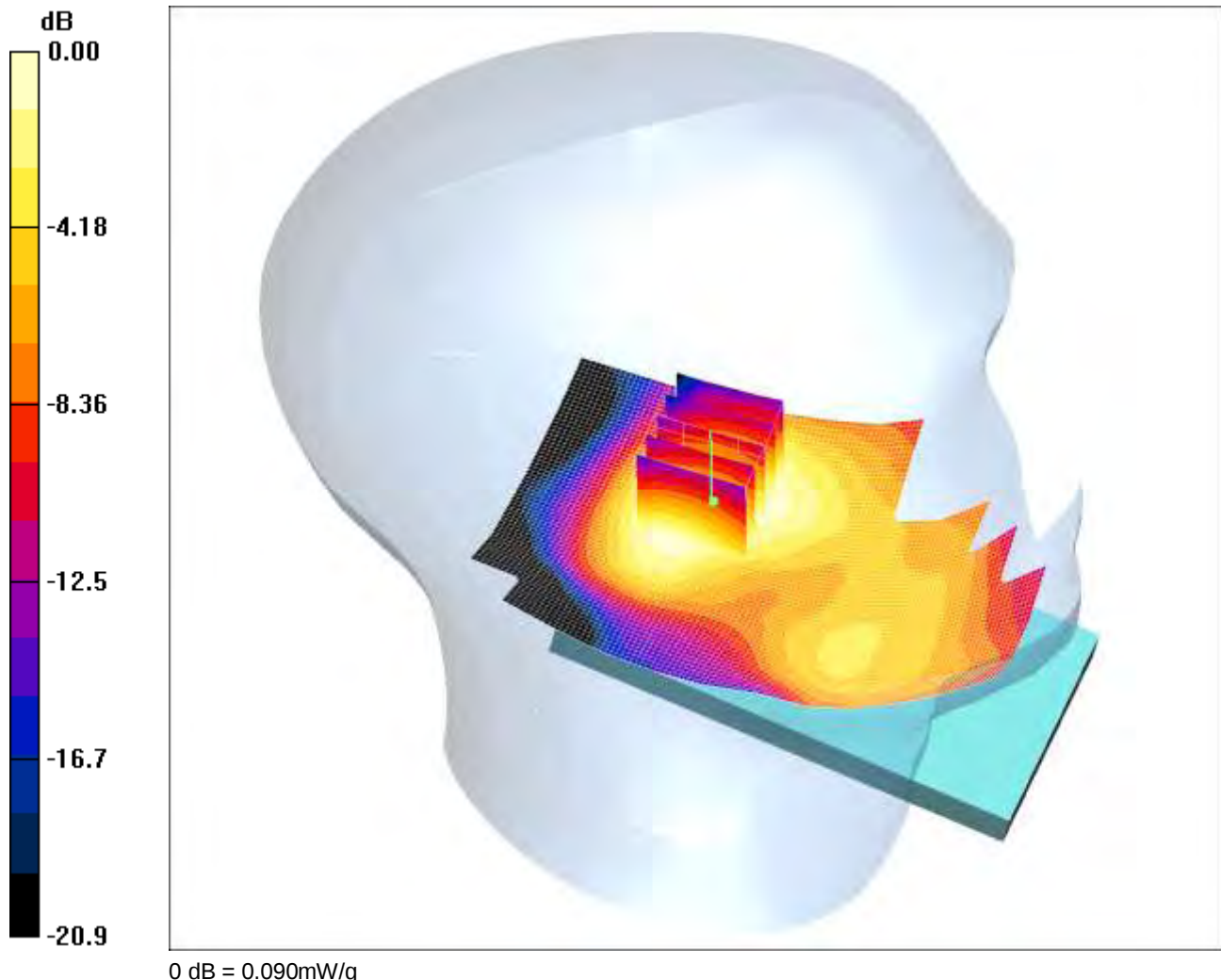
SAR(1 g) = 0.188 mW/g; SAR(10 g) = 0.120 mW/g

Maximum value of SAR (measured) = 0.196 mW/g

SCN/92490/043: Tilt Left UMTS FDD2 CH9400

Date: 19/03/2013

DUT: Sony Gaga Anna; Type: Gaga Anna; Serial: PM-0400-BV



Communication System: UMTS-FDD 2; Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: 1900 MHz HSL Medium parameters used (interpolated): $f = 1880$ MHz; $\sigma = 1.41$ mho/m; $\epsilon_r = 39$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1528; ConvF(4.92, 4.92, 4.92); Calibrated: 26/07/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn432; Calibrated: 02/05/2012
- Phantom: SAM 12b (Site 57); Type: SAM 4.0; Serial: TP:1031
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 145

Tilt Left - Middle 2 2/Area Scan (71x121x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.097 mW/g

Tilt Left - Middle 2 2/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 5.36 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 0.114 W/kg

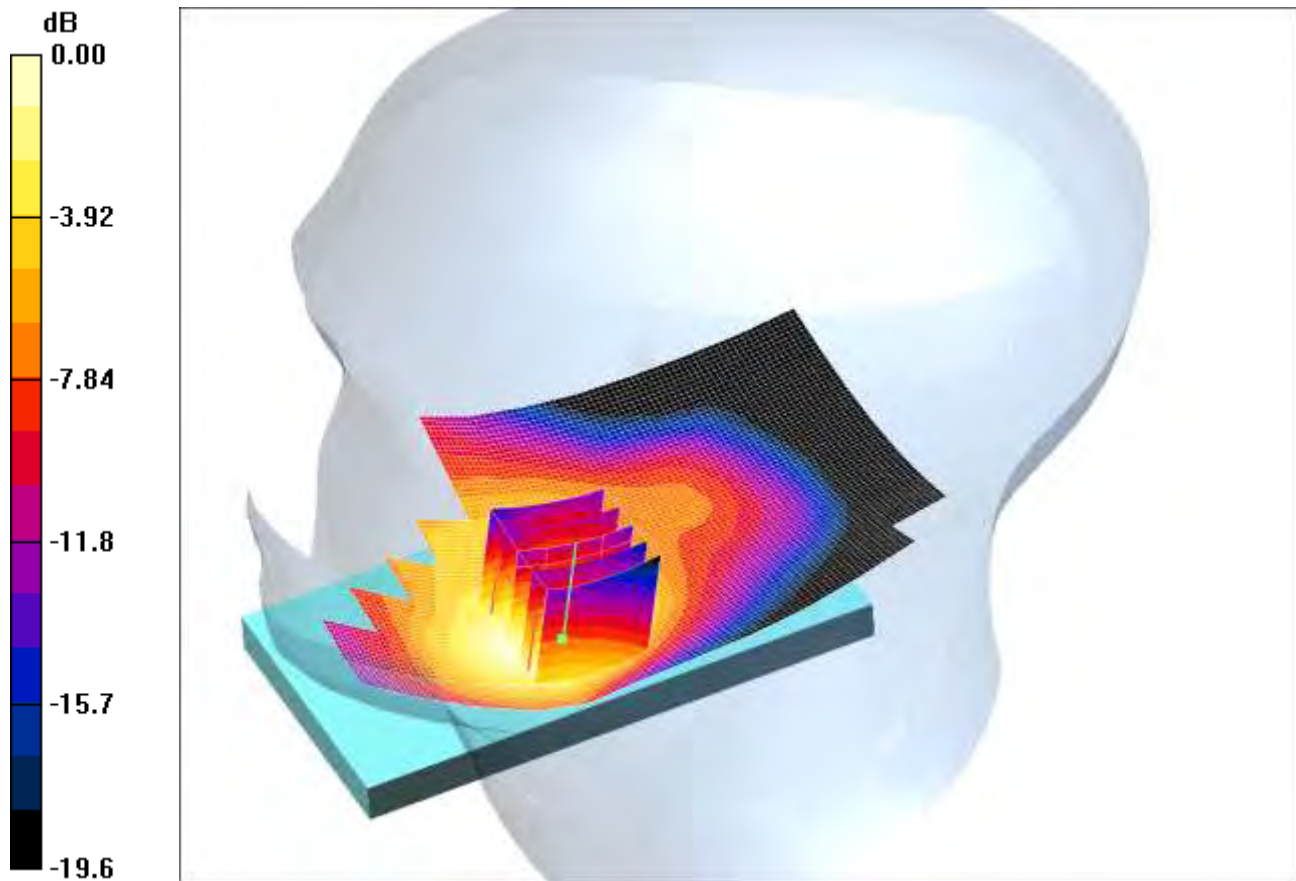
SAR(1 g) = 0.084 mW/g; SAR(10 g) = 0.055 mW/g

Maximum value of SAR (measured) = 0.090 mW/g

SCN/92490/044: Touch Right UMTS FDD2 CH9400

Date/ 19/03/2013

DUT: Sony Gaga Anna; Type: Gaga Anna; Serial: PM-0400-BV



0 dB = 0.241mW/g

Communication System: UMTS-FDD 2; Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: 1900 MHz HSL Medium parameters used (interpolated): $f = 1880$ MHz; $\sigma = 1.41$ mho/m; $\epsilon_r = 39$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1528; ConvF(4.92, 4.92, 4.92); Calibrated: 26/07/2012

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn432; Calibrated: 02/05/2012

- Phantom: SAM 12b (Site 57); Type: SAM 4.0; Serial: TP:1031

- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 145

Touch Right - Middle/Area Scan (71x121x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.246 mW/g

Touch Right - Middle/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 3.47 V/m; Power Drift = 0.020 dB

Peak SAR (extrapolated) = 0.317 W/kg

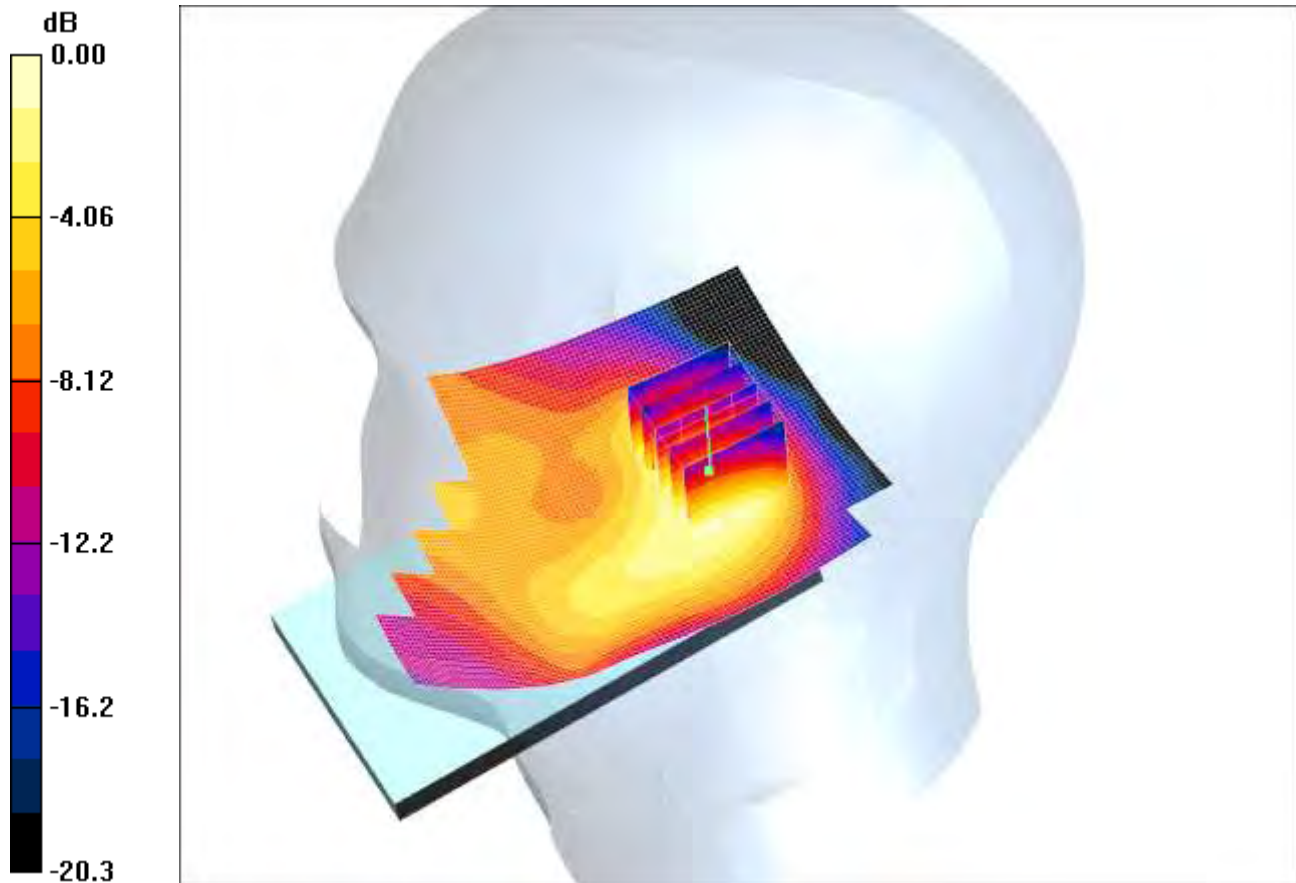
SAR(1 g) = 0.223 mW/g; SAR(10 g) = 0.138 mW/g

Maximum value of SAR (measured) = 0.241 mW/g

SCN/92490/045: Tilt Right UMTS FDD2 CH9400

Date 19/03/2013

DUT: Sony Gaga Anna; Type: Gaga Anna; Serial: PM-0400-BV



0 dB = 0.092mW/g

Communication System: UMTS-FDD 2; Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: 1900 MHz HSL Medium parameters used (interpolated): $f = 1880$ MHz; $\sigma = 1.41$ mho/m; $\epsilon_r = 39$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1528; ConvF(4.92, 4.92, 4.92); Calibrated: 26/07/2012

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn432; Calibrated: 02/05/2012

- Phantom: SAM 12b (Site 57); Type: SAM 4.0; Serial: TP:1031

- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 145

Tilt Right - Middle 2/Area Scan (71x121x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.089 mW/g

Tilt Right - Middle 2/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 6.88 V/m; Power Drift = -0.044 dB

Peak SAR (extrapolated) = 0.126 W/kg

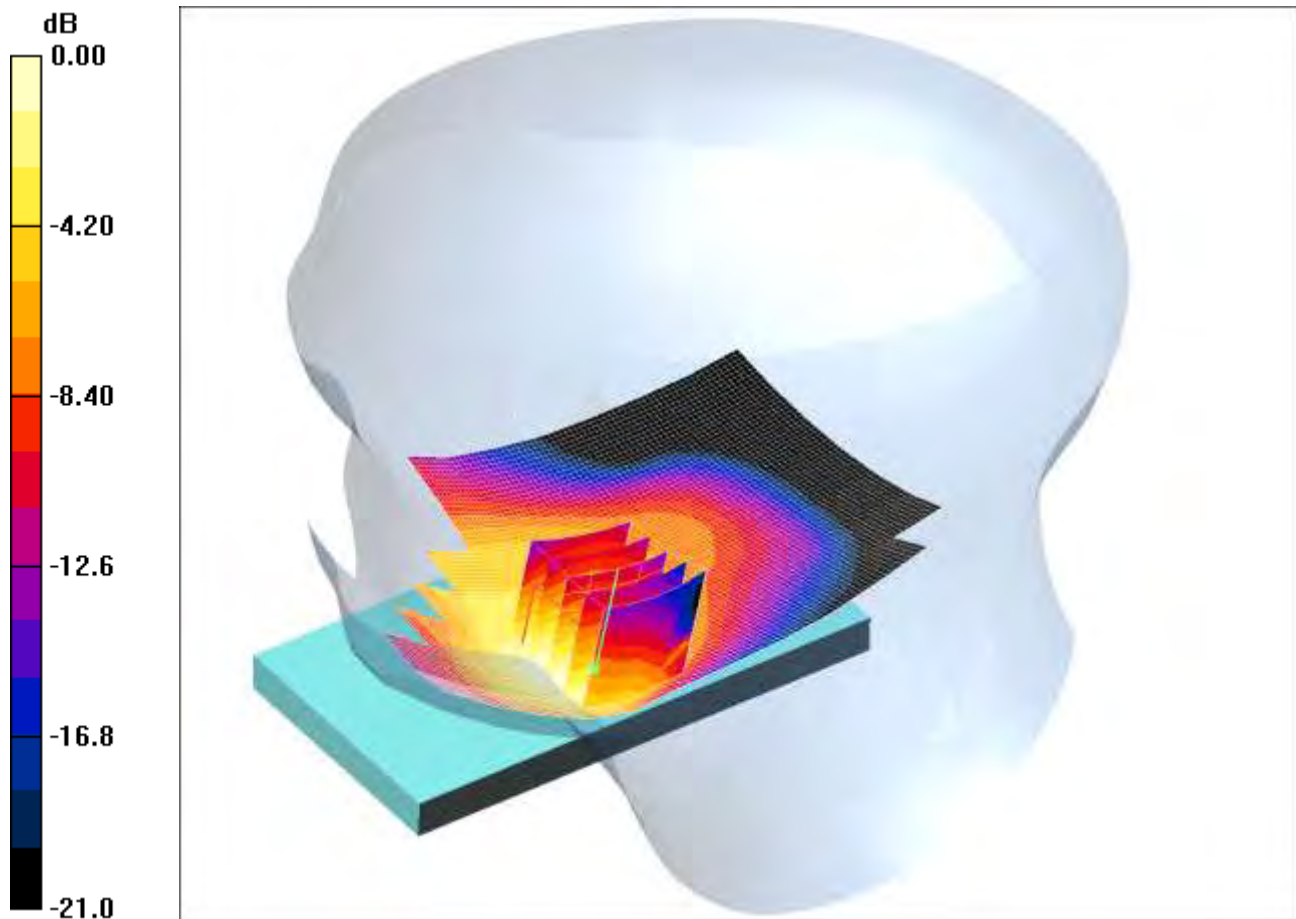
SAR(1 g) = 0.083 mW/g; SAR(10 g) = 0.049 mW/g

Maximum value of SAR (measured) = 0.092 mW/g

SCN/92490/046: Touch Right UMTS FDD2 CH9262

Date 19/03/2013

DUT: Sony Gaga Anna; Type: Gaga Anna; Serial: PM-0400-BV



0 dB = 0.195mW/g

Communication System: UMTS-FDD 2; Frequency: 1852.4 MHz; Duty Cycle: 1:1

Medium: 1900 MHz HSL Medium parameters used (interpolated): $f = 1852.4$ MHz; $\sigma = 1.39$ mho/m; $\epsilon_r = 39.1$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1528; ConvF(4.92, 4.92, 4.92); Calibrated: 26/07/2012

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn432; Calibrated: 02/05/2012

- Phantom: SAM 12b (Site 57); Type: SAM 4.0; Serial: TP:1031

- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 145

Touch Right - Low/Area Scan (71x121x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.199 mW/g

Touch Right - Low/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 3.11 V/m; Power Drift = -0.184 dB

Peak SAR (extrapolated) = 0.315 W/kg

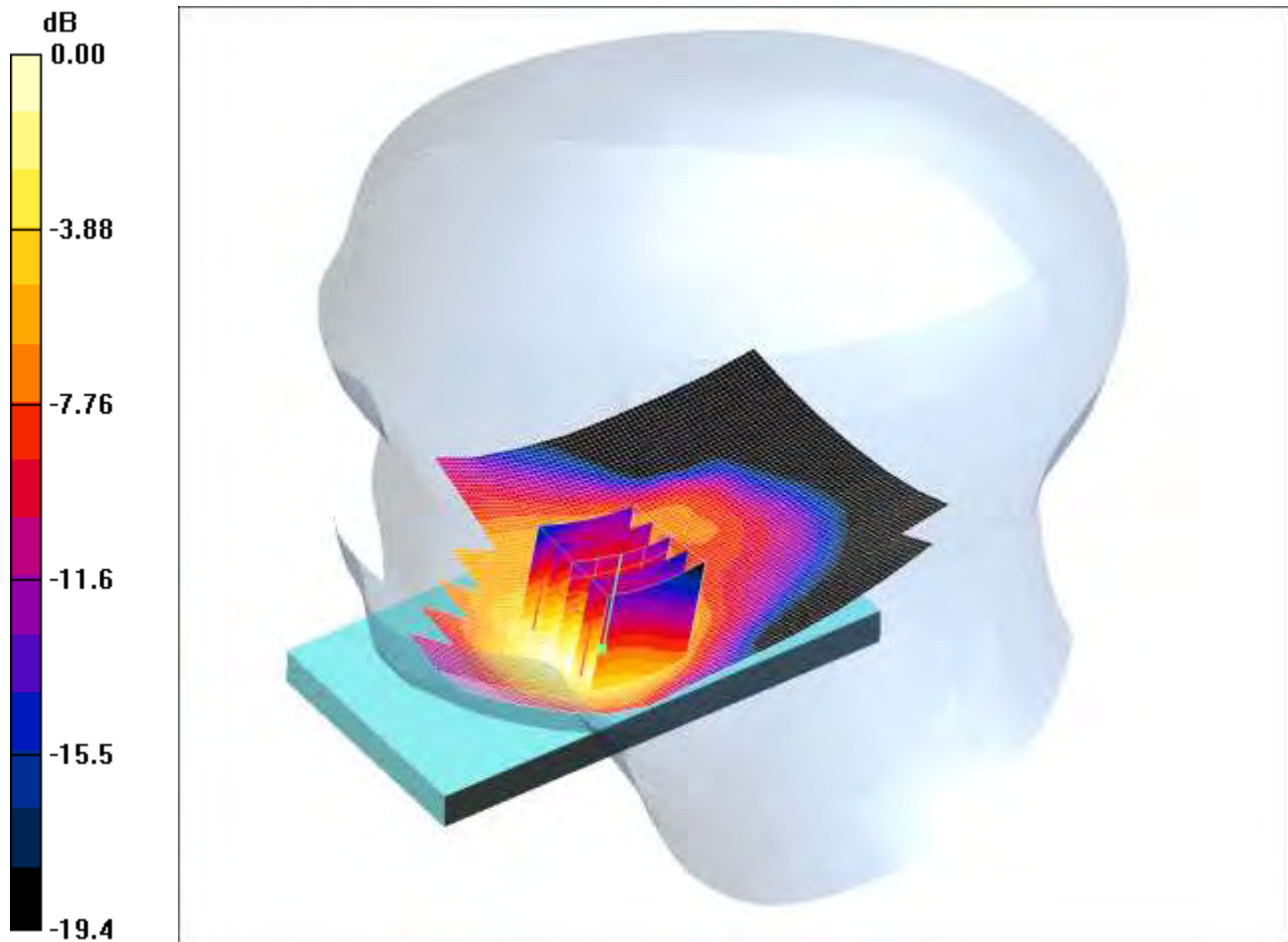
SAR(1 g) = 0.185 mW/g; SAR(10 g) = 0.117 mW/g

Maximum value of SAR (measured) = 0.195 mW/g

SCN/92490/047: Touch Right UMTS FDD2 CH9538

Date 19/03/2013

DUT: Sony Gaga Anna; Type: Gaga Anna; Serial: PM-0400-BV



0 dB = 0.253mW/g

Communication System: UMTS-FDD 2; Frequency: 1907.6 MHz; Duty Cycle: 1:1

Medium: 1900 MHz HSL Medium parameters used (interpolated): $f = 1907.6$ MHz; $\sigma = 1.44$ mho/m; $\epsilon_r = 38.9$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1528; ConvF(4.92, 4.92, 4.92); Calibrated: 26/07/2012

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn432; Calibrated: 02/05/2012

- Phantom: SAM 12b (Site 57); Type: SAM 4.0; Serial: TP:1031

- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 145

Touch Right - High/Area Scan (71x121x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.252 mW/g

Touch Right - High/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 3.75 V/m; Power Drift = -0.039 dB

Peak SAR (extrapolated) = 0.341 W/kg

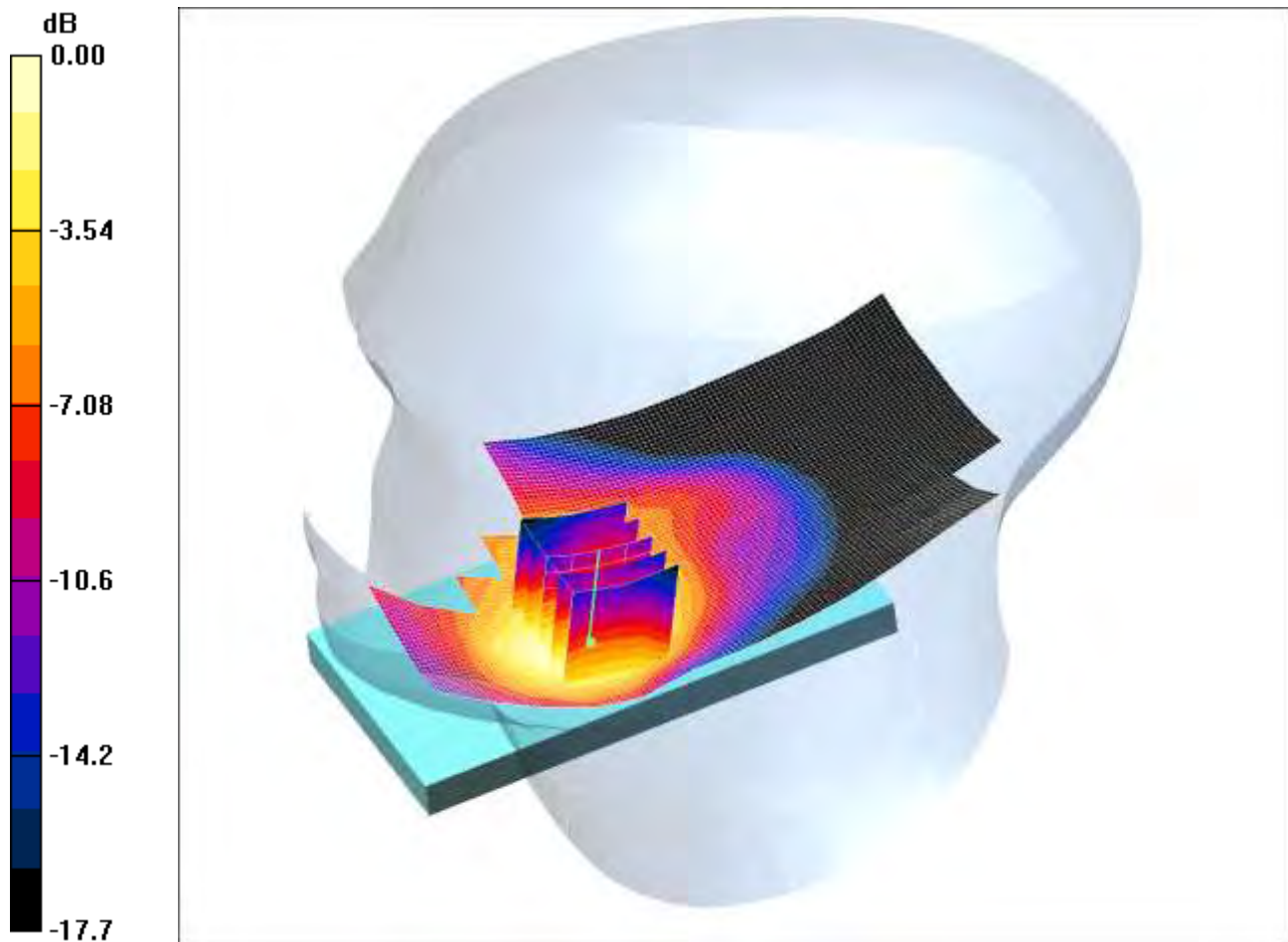
SAR(1 g) = 0.231 mW/g; SAR(10 g) = 0.139 mW/g

Maximum value of SAR (measured) = 0.253 mW/g

SCN/92490/048: Touch Right Antenna Extended UMTS FDD2 CH9538

Date 19/03/2013

DUT: Sony Gaga Anna; Type: Gaga Anna; Serial: PM-0400-BV



0 dB = 0.241mW/g

Communication System: UMTS-FDD 2; Frequency: 1907.6 MHz; Duty Cycle: 1:1

Medium: 1900 MHz HSL Medium parameters used (interpolated): $f = 1907.6$ MHz; $\sigma = 1.44$ mho/m; $\epsilon_r = 38.9$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1528; ConvF(4.92, 4.92, 4.92); Calibrated: 26/07/2012

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn432; Calibrated: 02/05/2012

- Phantom: SAM 12b (Site 57); Type: SAM 4.0; Serial: TP:1031

- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 145

Touch Right - High/Area Scan (71x131x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.264 mW/g

Touch Right - High/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 2.81 V/m; Power Drift = -0.077 dB

Peak SAR (extrapolated) = 0.336 W/kg

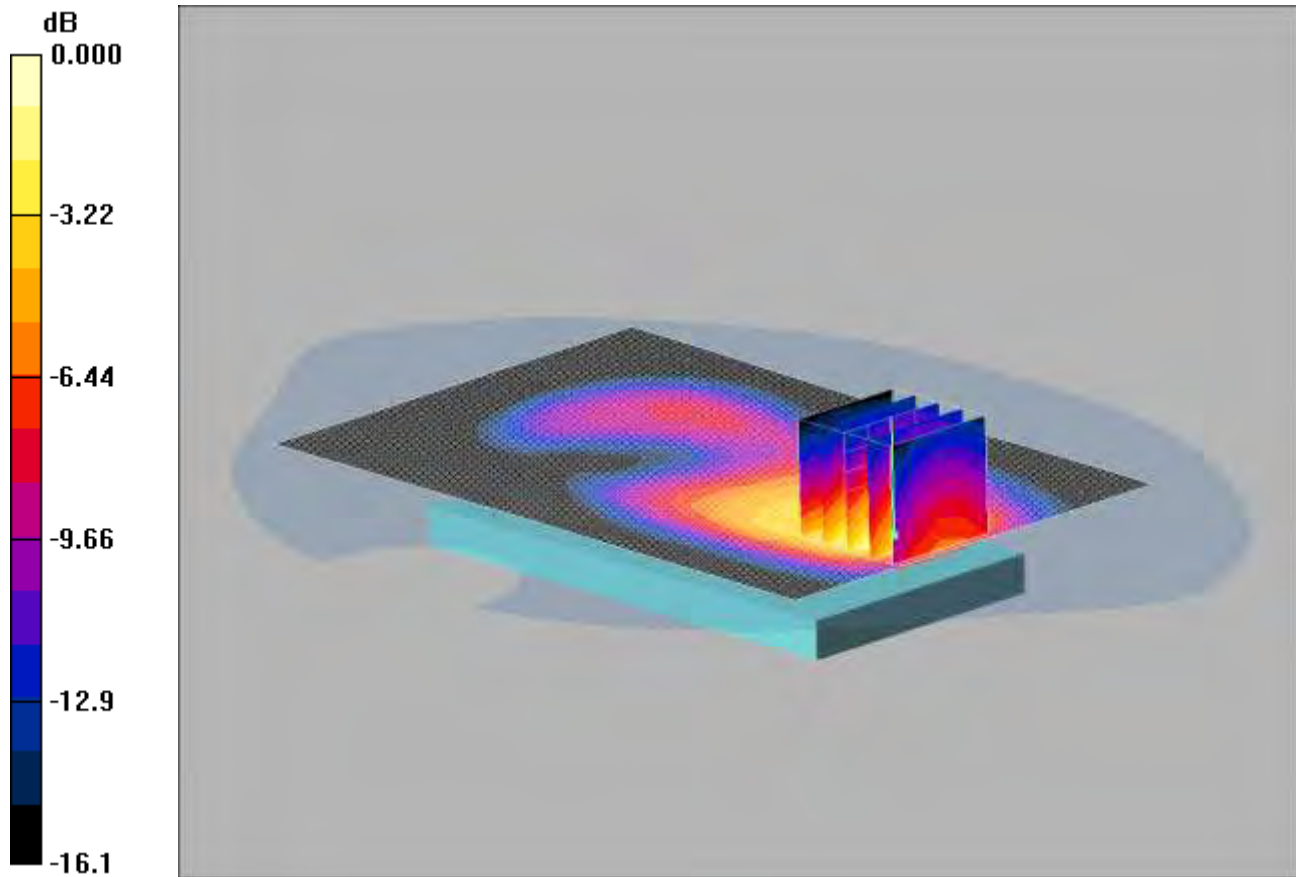
SAR(1 g) = 0.229 mW/g; SAR(10 g) = 0.139 mW/g

Maximum value of SAR (measured) = 0.241 mW/g

SCN/92490/049: Front of EUT Facing Phantom UMTS FDD 2 CH9400

Date: 20/03/2013

DUT: Sony Gaga Anna; Type: Gaga Anna; Serial: PM-0400-BV



0 dB = 0.745mW/g

Communication System: UMTS-FDD II; Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: 1900 MHz MSL Medium parameters used (interpolated): $f = 1880$ MHz; $\sigma = 1.47$ mho/m; $\epsilon_r = 51.3$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(4.69, 4.69, 4.69); Calibrated: 11/05/2012

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn431; Calibrated: 20/09/2012

- Phantom: SAM 12b (Site 56); Type: SAM 4.0; Serial: TP:1020

- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Front of EUT Facing Phantom - Middle 2/Area Scan (81x121x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.662 mW/g

Front of EUT Facing Phantom - Middle 2/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 6.88 V/m; Power Drift = 0.054 dB

Peak SAR (extrapolated) = 1.07 W/kg

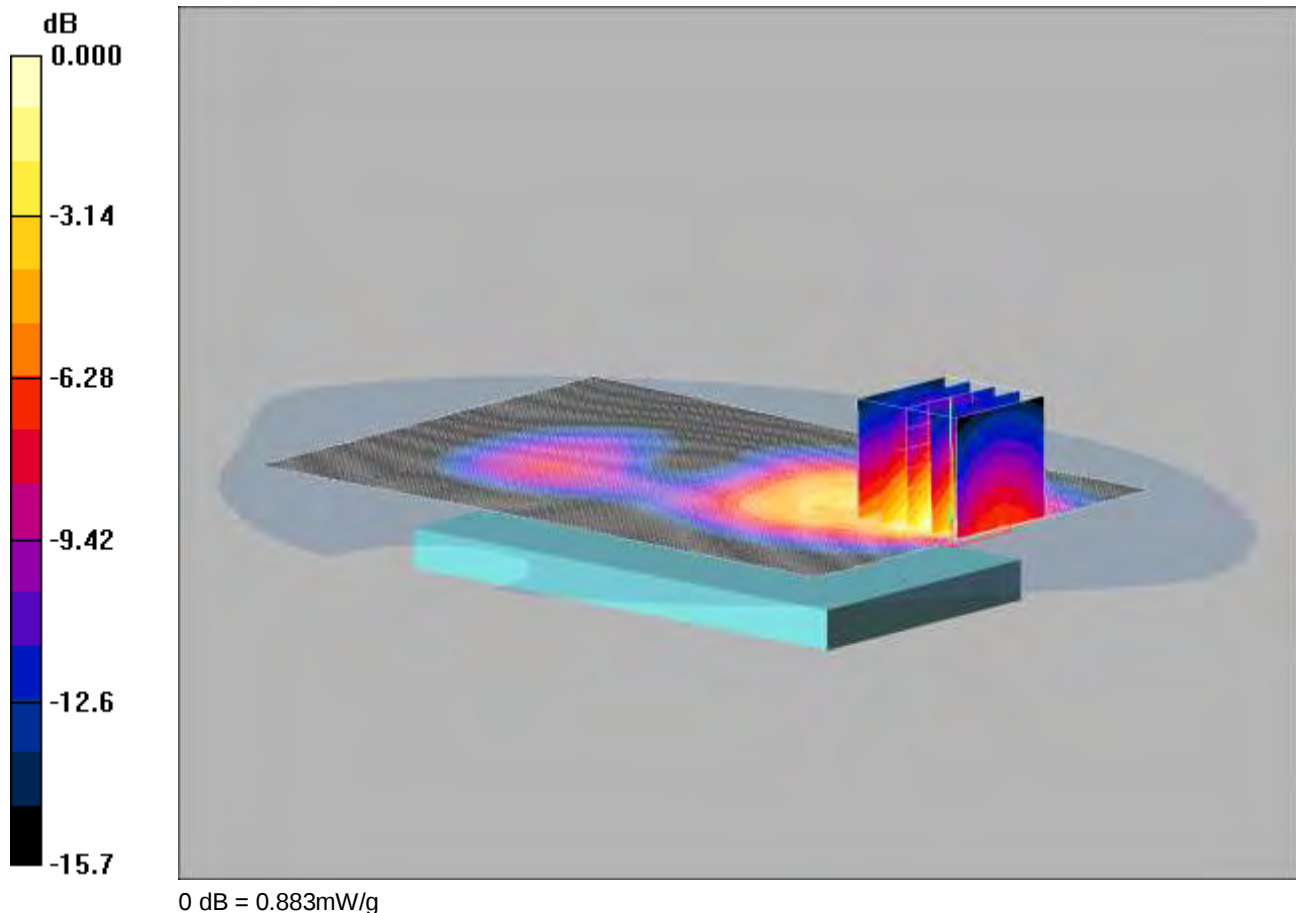
SAR(1 g) = 0.653 mW/g; SAR(10 g) = 0.357 mW/g

Maximum value of SAR (measured) = 0.745 mW/g

SCN/92490/050: Back of EUT Facing Phantom UMTS FDD 2 CH9400

Date: 20/03/2013

DUT: Sony Gaga Anna; Type: Gaga Anna; Serial: PM-0400-BV



0 dB = 0.883mW/g

Communication System: UMTS-FDD II; Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: 1900 MHz MSL Medium parameters used (interpolated): $f = 1880$ MHz; $\sigma = 1.47$ mho/m; $\epsilon_r = 51.3$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(4.69, 4.69, 4.69); Calibrated: 11/05/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn431; Calibrated: 20/09/2012
- Phantom: SAM 12b (Site 56); Type: SAM 4.0; Serial: TP:1020
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Back of EUT Facing Phantom - Middle/Area Scan (81x121x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.824 mW/g

Back of EUT Facing Phantom - Middle/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 6.76 V/m; Power Drift = -0.030 dB

Peak SAR (extrapolated) = 1.23 W/kg

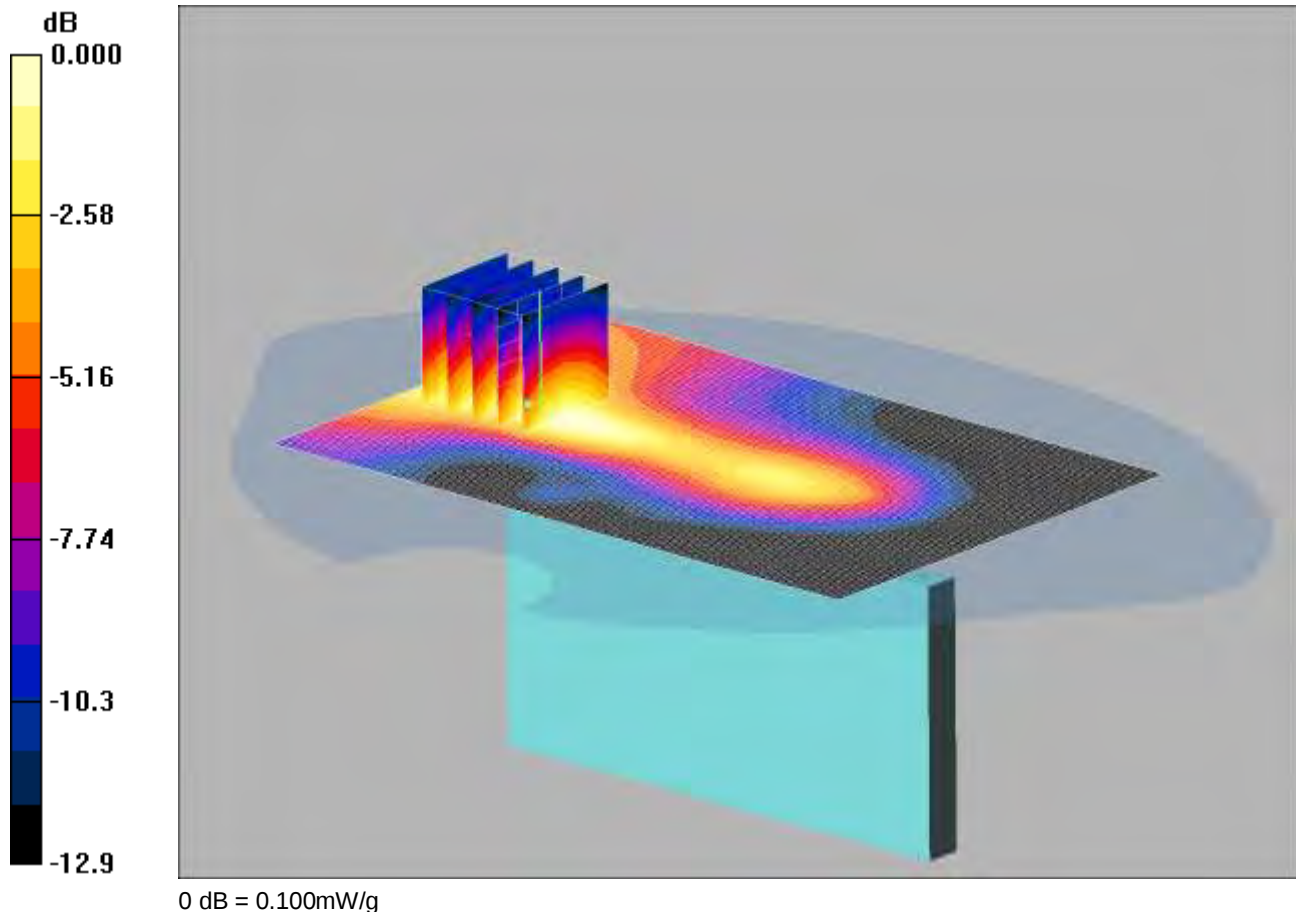
SAR(1 g) = 0.778 mW/g; SAR(10 g) = 0.437 mW/g

Maximum value of SAR (measured) = 0.883 mW/g

SCN/92490/051: Left Side of EUT Facing Phantom UMTS FDD 2 CH9400

Date: 20/03/2013

DUT: Sony Gaga Anna; Type: Gaga Anna; Serial: PM-0400-BV



Communication System: UMTS-FDD II; Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: 1900 MHz MSL Medium parameters used (interpolated): $f = 1880$ MHz; $\sigma = 1.47$ mho/m; $\epsilon_r = 51.3$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(4.69, 4.69, 4.69); Calibrated: 11/05/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn431; Calibrated: 20/09/2012
- Phantom: SAM 12b (Site 56); Type: SAM 4.0; Serial: TP:1020
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Left Side of EUT Facing Phantom - Middle/Area Scan (81x121x1): Measurement grid: $dx=15$ mm, $dy=15$ mm
Maximum value of SAR (interpolated) = 0.100 mW/g

Left Side of EUT Facing Phantom - Middle/Zoom Scan (5x5x7) 2 (5x5x7)/Cube 0: Measurement grid:

 $dx=8$ mm, $dy=8$ mm, $dz=5$ mm

Reference Value = 6.46 V/m; Power Drift = -0.027 dB

Peak SAR (extrapolated) = 0.129 W/kg

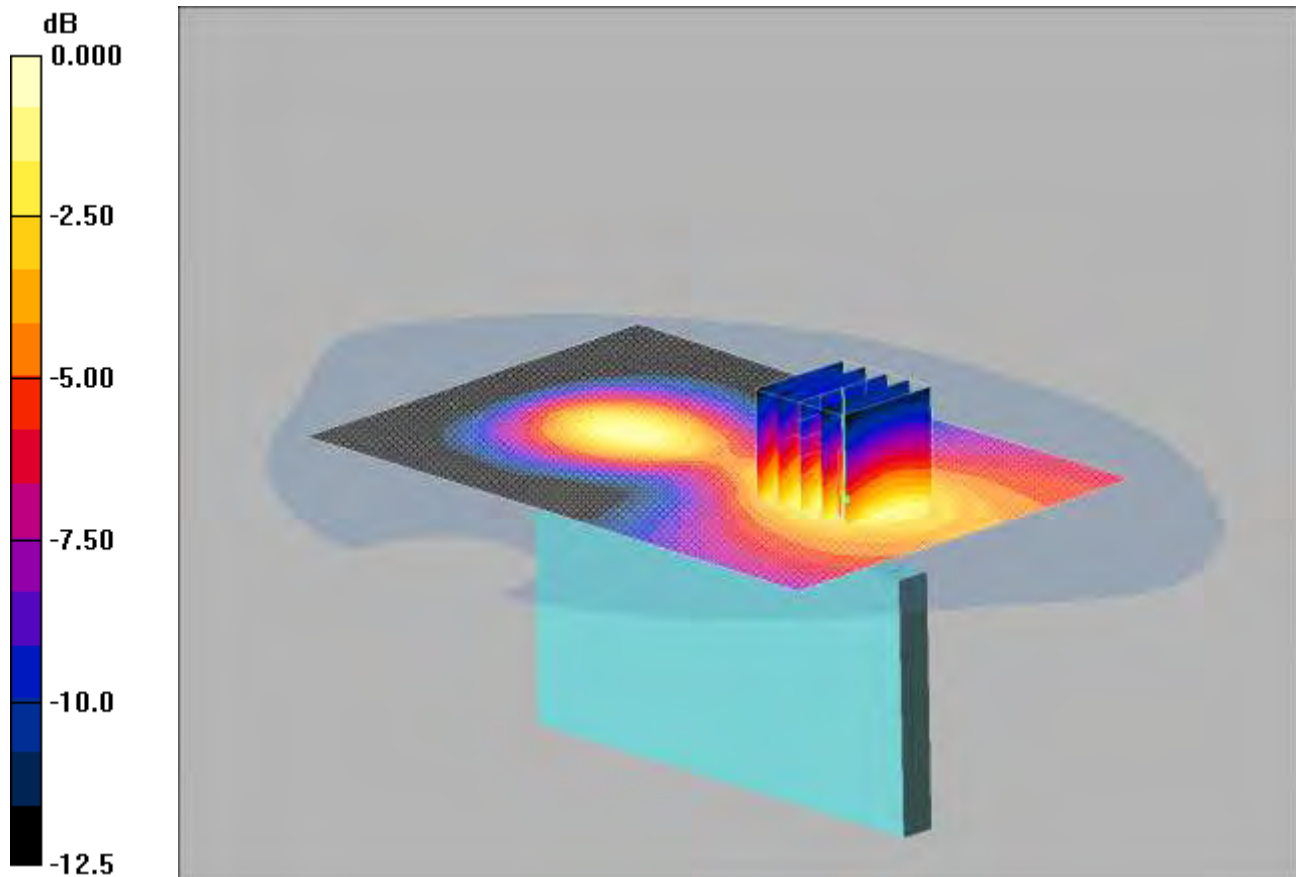
SAR(1 g) = 0.089 mW/g; SAR(10 g) = 0.058 mW/g

Maximum value of SAR (measured) = 0.100 mW/g

SCN/92490/052: Right Side of EUT Facing Phantom UMTS FDD 2 CH9400

Date: 20/03/2013

DUT: Sony Gaga Anna; Type: Gaga Anna; Serial: PM-0400-BV



0 dB = 0.106mW/g

Communication System: UMTS-FDD II; Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: 1900 MHz MSL Medium parameters used (interpolated): $f = 1880$ MHz; $\sigma = 1.47$ mho/m; $\epsilon_r = 51.3$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(4.69, 4.69, 4.69); Calibrated: 11/05/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn431; Calibrated: 20/09/2012
- Phantom: SAM 12b (Site 56); Type: SAM 4.0; Serial: TP:1020
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Right Side of EUT Facing Phantom - Middle/Area Scan (81x121x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.094 mW/g

Right Side of EUT Facing Phantom - Middle/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid:

dx=8mm, dy=8mm, dz=5mm

Reference Value = 5.47 V/m; Power Drift = -0.120 dB

Peak SAR (extrapolated) = 0.150 W/kg

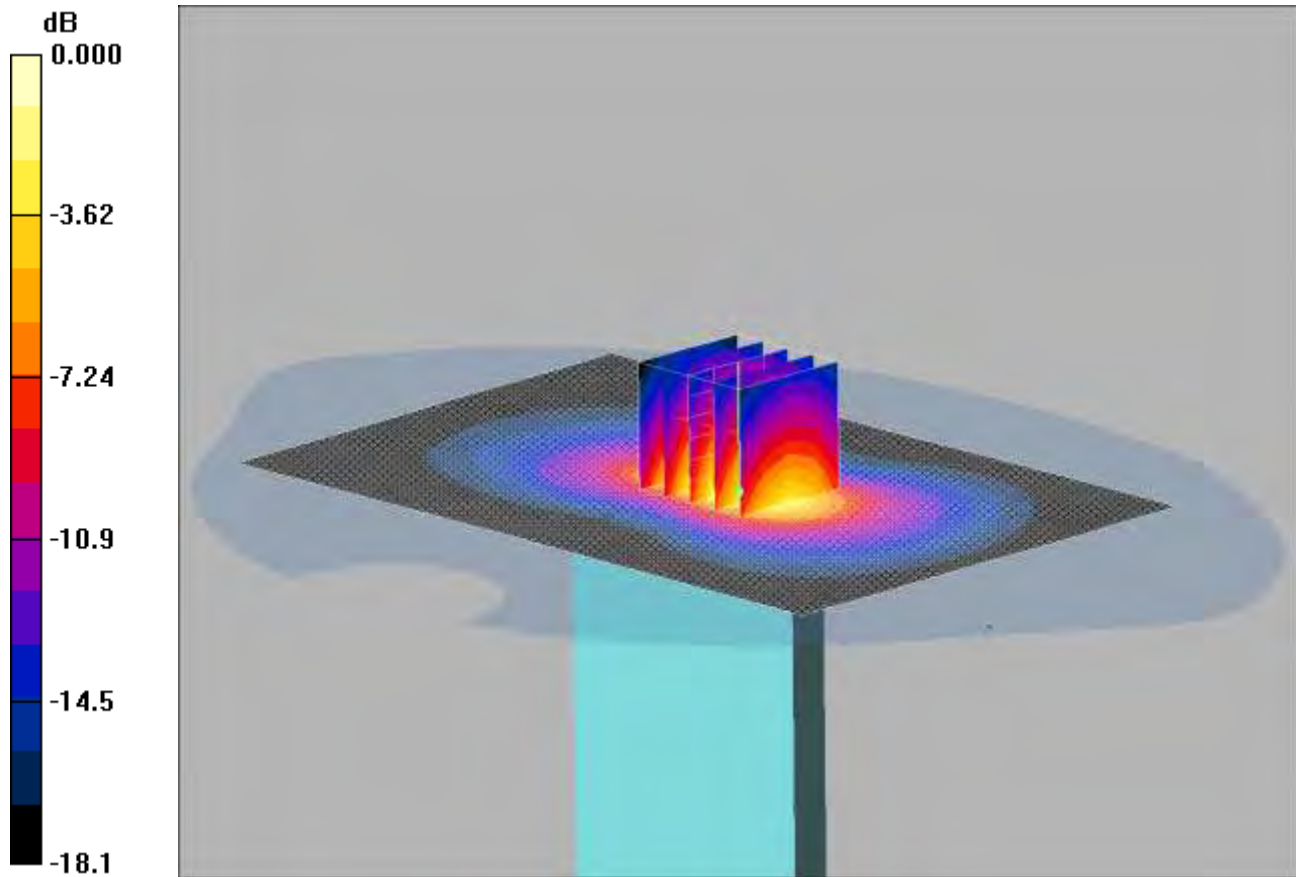
SAR(1 g) = 0.098 mW/g; SAR(10 g) = 0.063 mW/g

Maximum value of SAR (measured) = 0.106 mW/g

SCN/92490/053: Bottom of EUT Facing Phantom UMTS FDD 2 CH9400

Date: 20/03/2013

DUT: Sony Gaga Anna; Type: Gaga Anna; Serial: PM-0400-BV



0 dB = 0.990mW/g

Communication System: UMTS-FDD II; Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: 1900 MHz MSL Medium parameters used (interpolated): $f = 1880$ MHz; $\sigma = 1.47$ mho/m; $\epsilon_r = 51.3$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(4.69, 4.69, 4.69); Calibrated: 11/05/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn431; Calibrated: 20/09/2012
- Phantom: SAM 12b (Site 56); Type: SAM 4.0; Serial: TP:1020
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Bottom of EUT Facing Phantom - Middle/Area Scan (81x121x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.996 mW/g

Bottom of EUT Facing Phantom - Middle/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 25.7 V/m; Power Drift = -0.032 dB

Peak SAR (extrapolated) = 1.46 W/kg

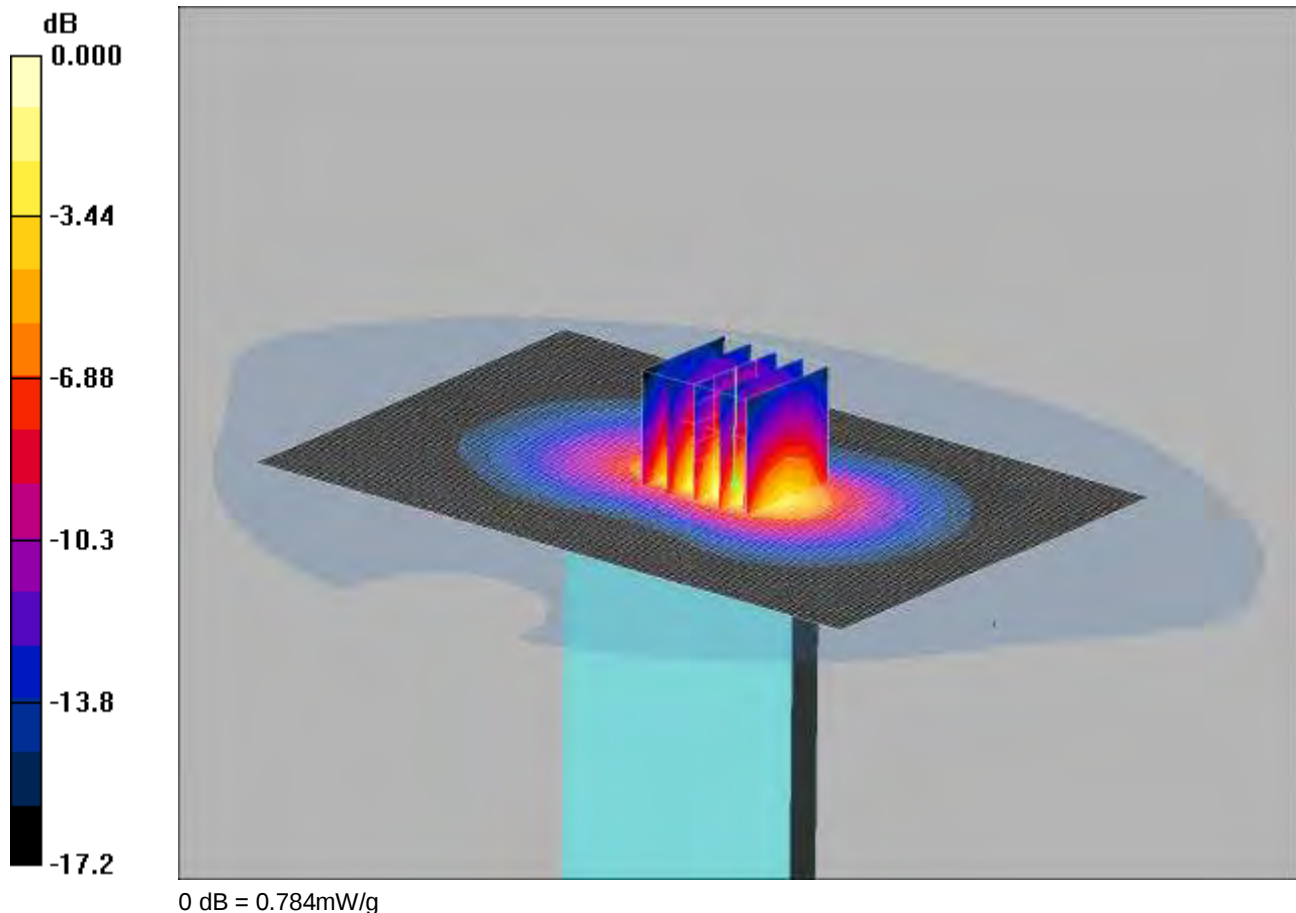
SAR(1 g) = 0.866 mW/g; SAR(10 g) = 0.444 mW/g

Maximum value of SAR (measured) = 0.990 mW/g

SCN/92490/054: Bottom of EUT Facing Phantom UMTS FDD 2 CH9262

Date: 20/03/2013

DUT: Sony Gaga Anna; Type: Gaga Anna; Serial: PM-0400-BV



Communication System: UMTS-FDD II; Frequency: 1852.4 MHz; Duty Cycle: 1:1

Medium: 1900 MHz MSL Medium parameters used (interpolated): $f = 1852.4$ MHz; $\sigma = 1.45$ mho/m; $\epsilon_r = 51.3$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(4.69, 4.69, 4.69); Calibrated: 11/05/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn431; Calibrated: 20/09/2012
- Phantom: SAM 12b (Site 56); Type: SAM 4.0; Serial: TP:1020
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Bottom of EUT Facing Phantom - Low/Area Scan (81x121x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.771 mW/g

Bottom of EUT Facing Phantom - Low/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 23.4 V/m; Power Drift = -0.092 dB

Peak SAR (extrapolated) = 1.10 W/kg

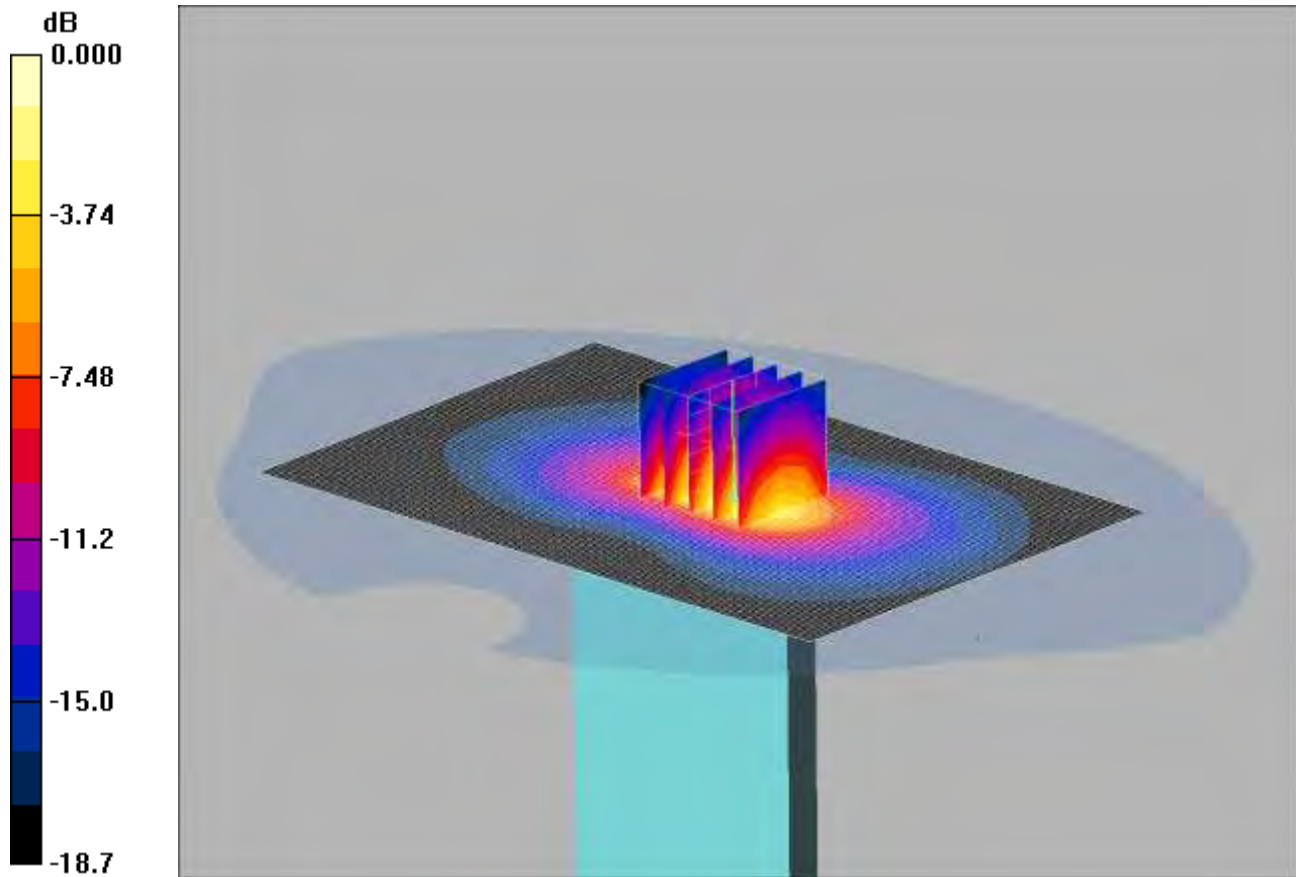
SAR(1 g) = 0.680 mW/g; SAR(10 g) = 0.354 mW/g

Maximum value of SAR (measured) = 0.784 mW/g

SCN/92490/055: Bottom of EUT Facing Phantom UMTS FDD 2 CH9538

Date: 20/03/2013

DUT: Sony Gaga Anna; Type: Gaga Anna; Serial: PM-0400-BV



0 dB = 1.04mW/g

Communication System: UMTS-FDD II; Frequency: 1907.6 MHz; Duty Cycle: 1:1

Medium: 1900 MHz MSL Medium parameters used (interpolated): $f = 1907.6$ MHz; $\sigma = 1.5$ mho/m; $\epsilon_r = 51.2$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(4.69, 4.69, 4.69); Calibrated: 11/05/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn431; Calibrated: 20/09/2012
- Phantom: SAM 12b (Site 56); Type: SAM 4.0; Serial: TP:1020
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Bottom of EUT Facing Phantom - High/Area Scan (81x121x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.02 mW/g

Bottom of EUT Facing Phantom - High/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 25.2 V/m; Power Drift = 0.065 dB

Peak SAR (extrapolated) = 1.56 W/kg

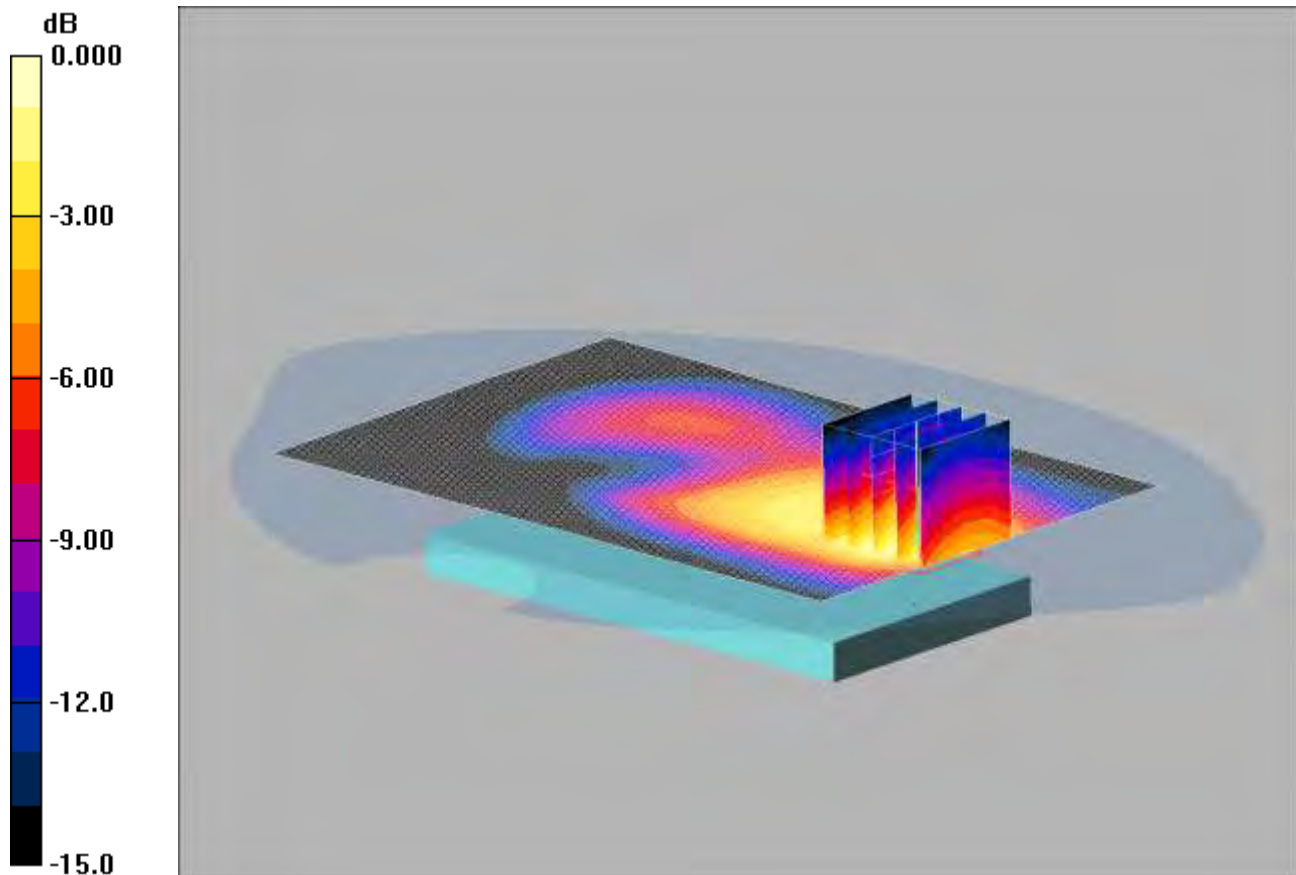
SAR(1 g) = 0.899 mW/g; SAR(10 g) = 0.452 mW/g

Maximum value of SAR (measured) = 1.04 mW/g

SCN/92490/056: Front of EUT Facing Phantom at 15mm UMTS FDD 2 CH9538

Date: 20/03/2013

DUT: Sony Gaga Anna; Type: Gaga Anna; Serial: PM-0400-BV



0 dB = 0.373mW/g

Communication System: UMTS-FDD II; Frequency: 1907.6 MHz; Duty Cycle: 1:1

Medium: 1900 MHz MSL Medium parameters used (interpolated): $f = 1907.6$ MHz; $\sigma = 1.5$ mho/m; $\epsilon_r = 51.2$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(4.69, 4.69, 4.69); Calibrated: 11/05/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn431; Calibrated: 20/09/2012
- Phantom: SAM 12b (Site 56); Type: SAM 4.0; Serial: TP:1020
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Front of EUT Facing Phantom - High/Area Scan (81x121x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.369 mW/g

Front of EUT Facing Phantom - High/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 6.29 V/m; Power Drift = 0.019 dB

Peak SAR (extrapolated) = 0.520 W/kg

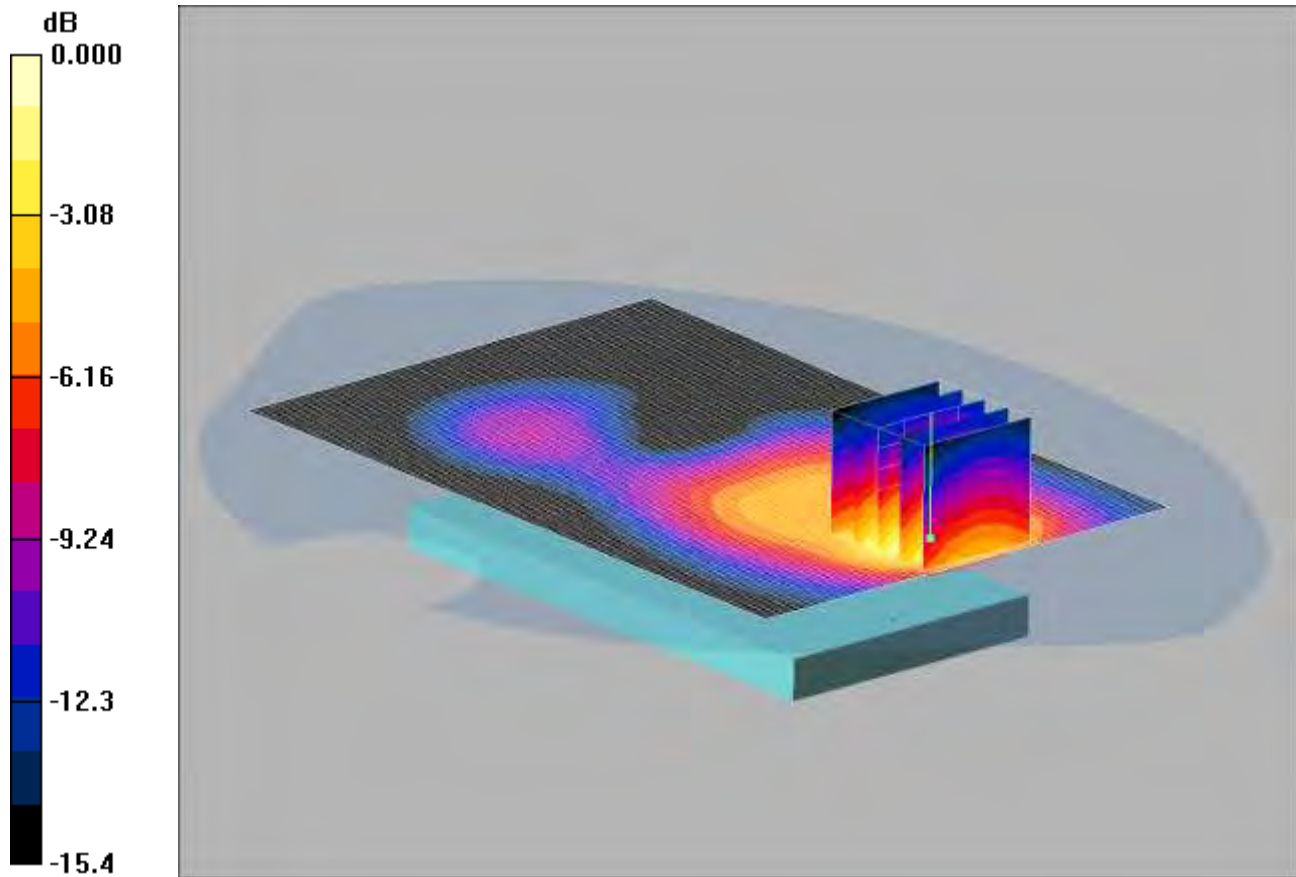
SAR(1 g) = 0.332 mW/g; SAR(10 g) = 0.193 mW/g

Maximum value of SAR (measured) = 0.373 mW/g

SCN/92490/057: Back of EUT Facing Phantom at 15mm UMTS FDD 2 CH9538

Date: 20/03/2013

DUT: Sony Gaga Anna; Type: Gaga Anna; Serial: PM-0400-BV



0 dB = 0.494mW/g

Communication System: UMTS-FDD II; Frequency: 1907.6 MHz; Duty Cycle: 1:1

Medium: 1900 MHz MSL Medium parameters used (interpolated): $f = 1907.6$ MHz; $\sigma = 1.5$ mho/m; $\epsilon_r = 51.2$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(4.69, 4.69, 4.69); Calibrated: 11/05/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn431; Calibrated: 20/09/2012
- Phantom: SAM 12b (Site 56); Type: SAM 4.0; Serial: TP:1020
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Back of EUT Facing Phantom - High/Area Scan (81x121x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.475 mW/g

Back of EUT Facing Phantom - High/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 6.22 V/m; Power Drift = 0.087 dB

Peak SAR (extrapolated) = 0.675 W/kg

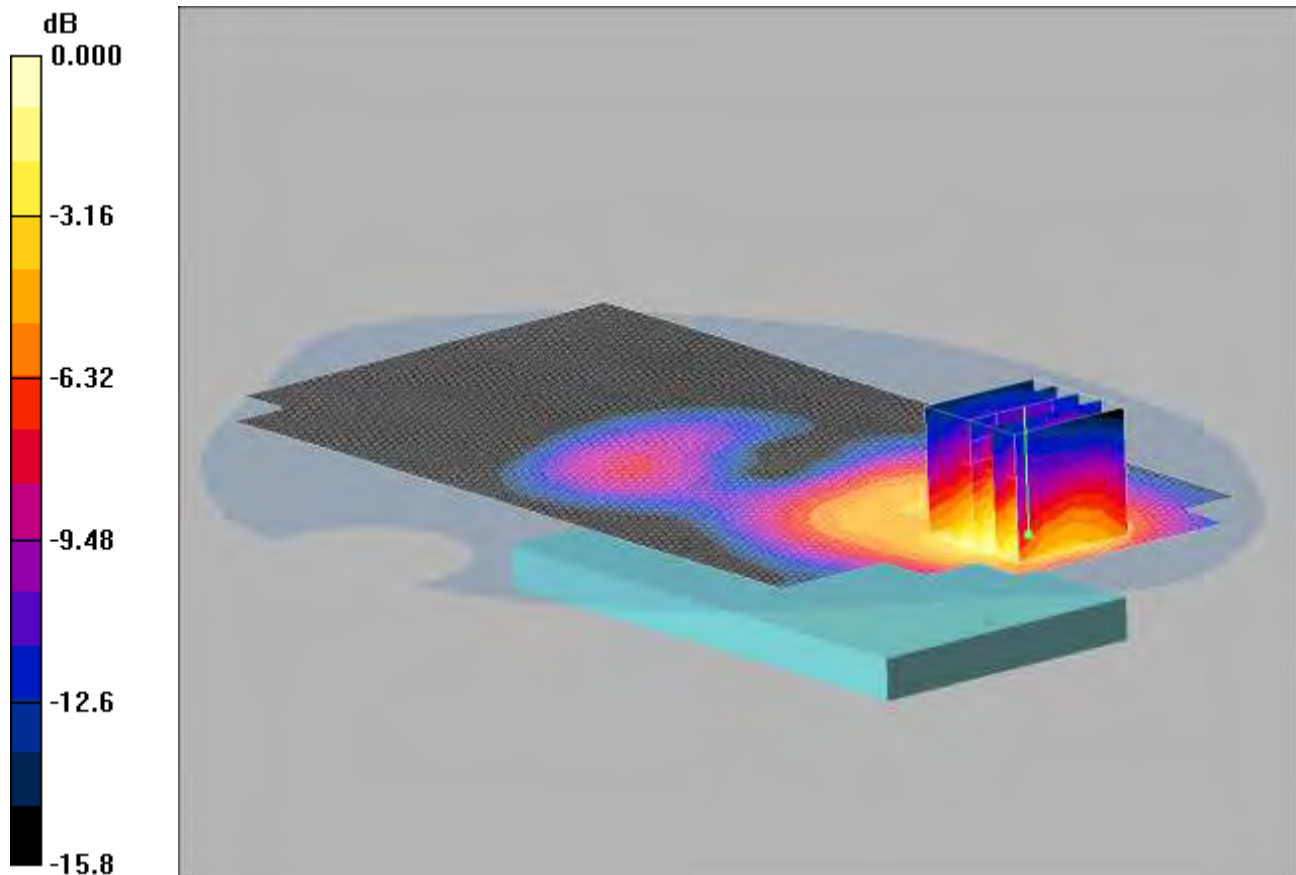
SAR(1 g) = 0.440 mW/g; SAR(10 g) = 0.254 mW/g

Maximum value of SAR (measured) = 0.494 mW/g

SCN/92490/058: Back of EUT Antenna Extended Facing Phantom at 15mm UMTS FDD 2 CH9538

Date: 20/03/2013

DUT: Sony Gaga Anna; Type: Gaga Anna; Serial: PM-0400-BV



0 dB = 0.500mW/g

Communication System: UMTS-FDD II; Frequency: 1907.6 MHz; Duty Cycle: 1:1

Medium: 1900 MHz MSL Medium parameters used (interpolated): $f = 1907.6$ MHz; $\sigma = 1.5$ mho/m; $\epsilon_r = 51.2$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(4.69, 4.69, 4.69); Calibrated: 11/05/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn431; Calibrated: 20/09/2012
- Phantom: SAM 12b (Site 56); Type: SAM 4.0; Serial: TP:1020
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Back of EUT Facing Phantom - High/Area Scan (81x161x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.483 mW/g

Back of EUT Facing Phantom - High/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 5.78 V/m; Power Drift = 0.158 dB

Peak SAR (extrapolated) = 0.686 W/kg

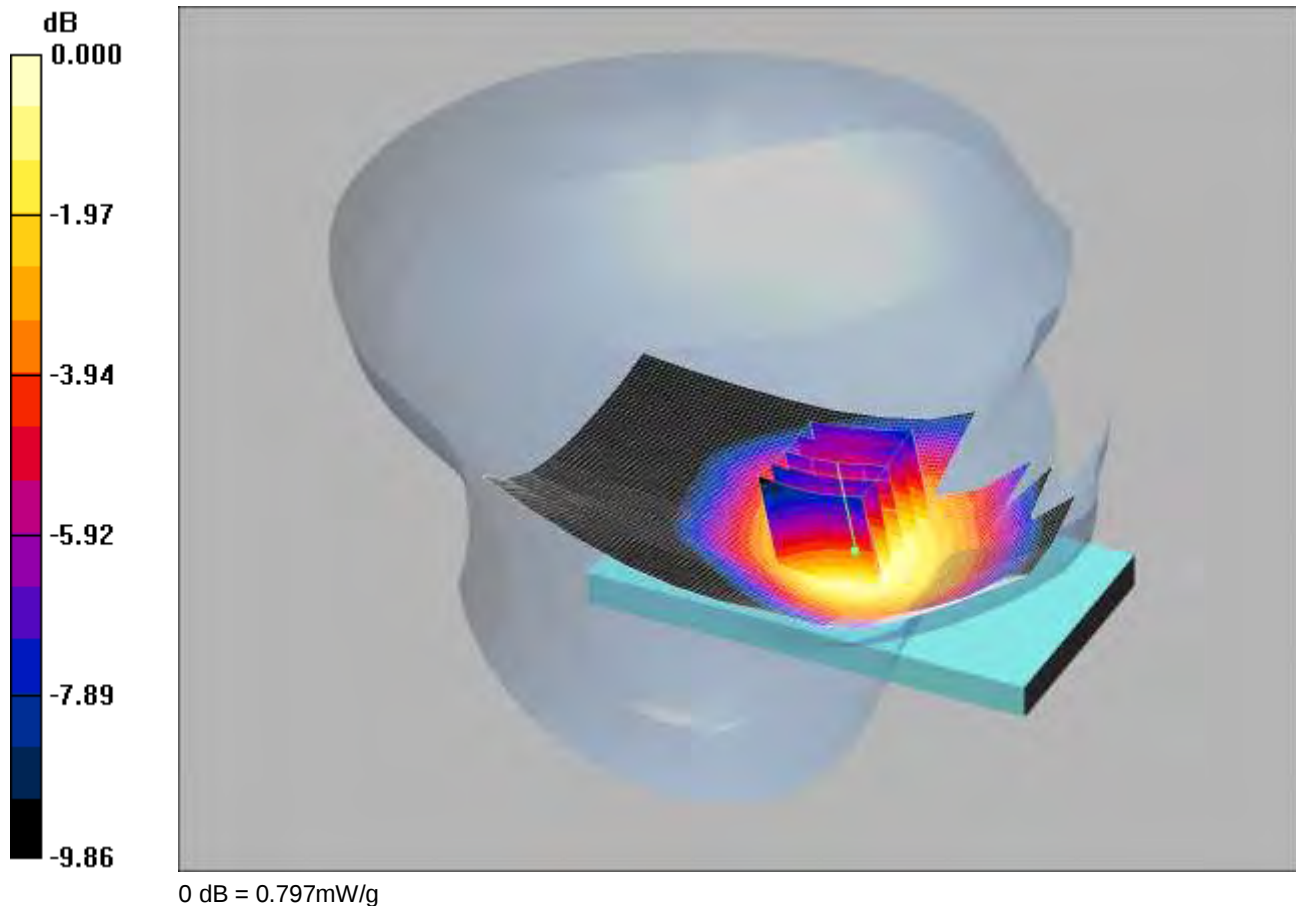
SAR(1 g) = 0.447 mW/g; SAR(10 g) = 0.261 mW/g

Maximum value of SAR (measured) = 0.500 mW/g

SCN/92490/059: Touch Left UMTS FDD 5 CH4183

Date: 13/03/2013

DUT: Sony Gaga Anna; Type: Gaga Anna; Serial: PM-0400-BV



Communication System: UMTS-FDD 5; Frequency: 836.6 MHz; Duty Cycle: 1:1

Medium: 900 MHz HSL Medium parameters used (interpolated): $f = 836.6$ MHz; $\sigma = 0.934$ mho/m; $\epsilon_r = 41.7$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(6.33, 6.33, 6.33); Calibrated: 11/05/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn431; Calibrated: 20/09/2012
- Phantom: SAM 12b (Site 56); Type: SAM 4.0; Serial: TP:1020
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Touch Left - Middle/Area Scan (71x121x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.795 mW/g

Touch Left - Middle/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 8.26 V/m; Power Drift = 0.071 dB

Peak SAR (extrapolated) = 0.980 W/kg

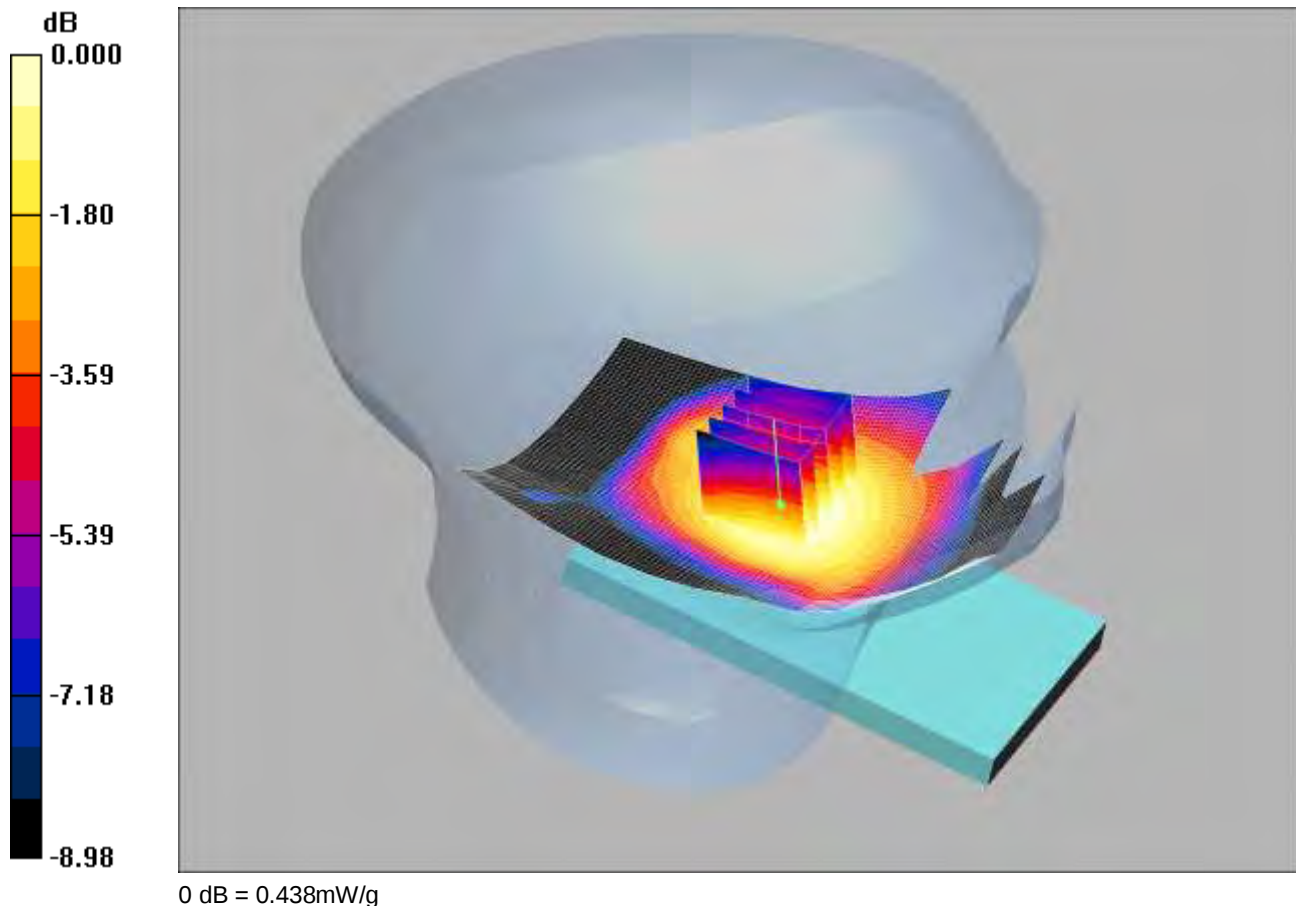
SAR(1 g) = 0.757 mW/g; SAR(10 g) = 0.561 mW/g

Maximum value of SAR (measured) = 0.797 mW/g

SCN/92490/060: Tilt Left UMTS FDD 5 CH4183

Date: 13/03/2013

DUT: Sony Gaga Anna; Type: Gaga Anna; Serial: PM-0400-BV



0 dB = 0.438mW/g

Communication System: UMTS-FDD 5; Frequency: 836.6 MHz; Duty Cycle: 1:1

Medium: 900 MHz HSL Medium parameters used (interpolated): $f = 836.6$ MHz; $\sigma = 0.934$ mho/m; $\epsilon_r = 41.7$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(6.33, 6.33, 6.33); Calibrated: 11/05/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn431; Calibrated: 20/09/2012
- Phantom: SAM 12b (Site 56); Type: SAM 4.0; Serial: TP:1020
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Tilt Left - Middle/Area Scan (71x121x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.447 mW/g

Tilt Left - Middle/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 12.3 V/m; Power Drift = -0.148 dB

Peak SAR (extrapolated) = 0.512 W/kg

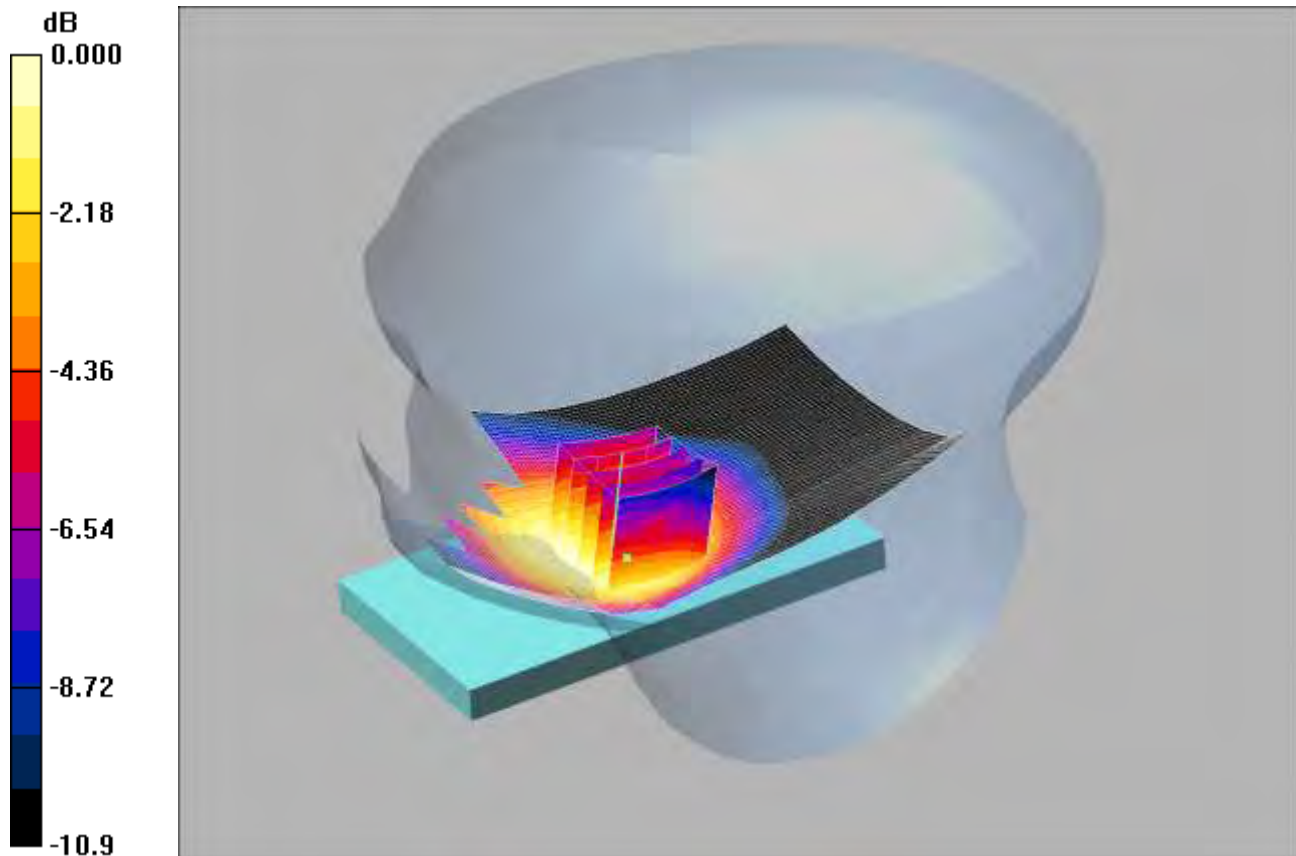
SAR(1 g) = 0.423 mW/g; SAR(10 g) = 0.329 mW/g

Maximum value of SAR (measured) = 0.438 mW/g

SCN/92490/061: Touch Right UMTS FDD 5 CH4183

Date: 13/03/2013

DUT: Sony Gaga Anna; Type: Gaga Anna; Serial: PM-0400-BV



0 dB = 0.751mW/g

Communication System: UMTS-FDD 5; Frequency: 836.6 MHz; Duty Cycle: 1:1

Medium: 900 MHz HSL Medium parameters used (interpolated): $f = 836.6$ MHz; $\sigma = 0.934$ mho/m; $\epsilon_r = 41.7$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(6.33, 6.33, 6.33); Calibrated: 11/05/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn431; Calibrated: 20/09/2012
- Phantom: SAM 12b (Site 56); Type: SAM 4.0; Serial: TP:1020
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Touch Right - Middle/Area Scan (71x121x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.773 mW/g

Touch Right - Middle/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 6.21 V/m; Power Drift = 0.014 dB

Peak SAR (extrapolated) = 0.889 W/kg

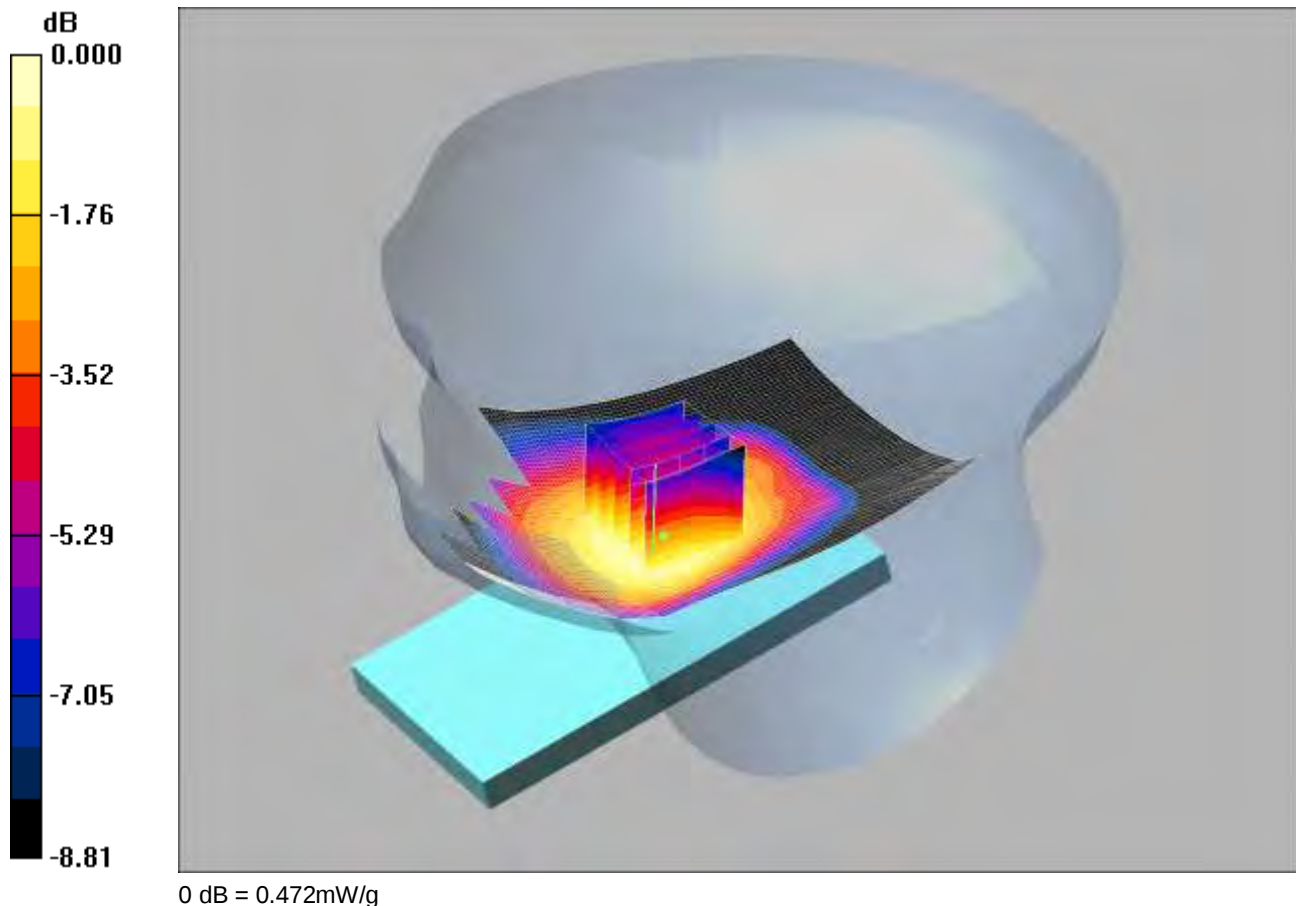
SAR(1 g) = 0.711 mW/g; SAR(10 g) = 0.542 mW/g

Maximum value of SAR (measured) = 0.751 mW/g

SCN/92490/062: Tilt Right UMTS FDD 5 CH4183

Date: 13/03/2013

DUT: Sony Gaga Anna; Type: Gaga Anna; Serial: PM-0400-BV



Communication System: UMTS-FDD 5; Frequency: 836.6 MHz; Duty Cycle: 1:1

Medium: 900 MHz HSL Medium parameters used (interpolated): $f = 836.6$ MHz; $\sigma = 0.934$ mho/m; $\epsilon_r = 41.7$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(6.33, 6.33, 6.33); Calibrated: 11/05/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn431; Calibrated: 20/09/2012
- Phantom: SAM 12b (Site 56); Type: SAM 4.0; Serial: TP:1020
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Tilt Right - Middle/Area Scan (71x121x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.455 mW/g

Tilt Right - Middle/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 12.0 V/m; Power Drift = 0.010 dB

Peak SAR (extrapolated) = 0.546 W/kg

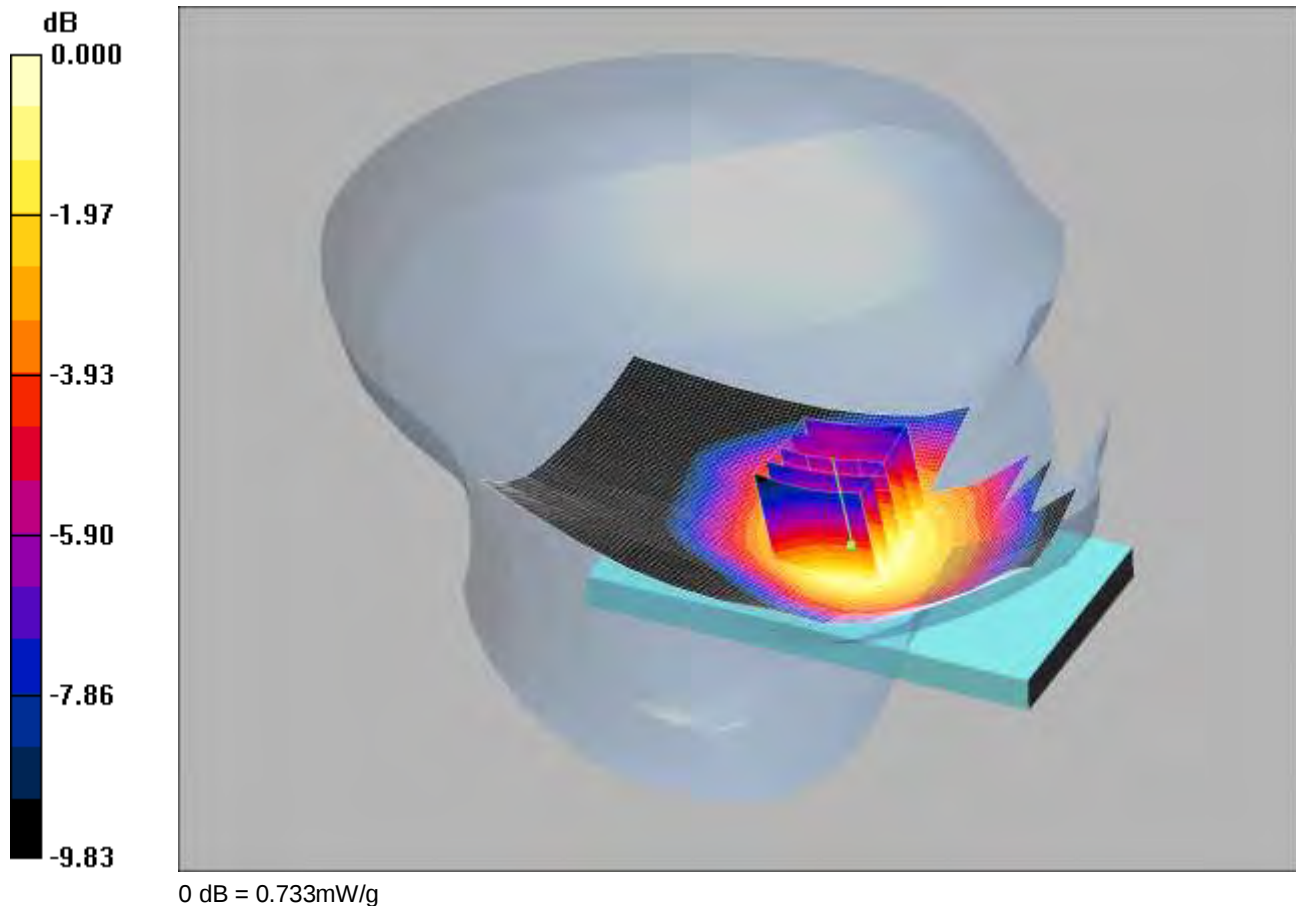
SAR(1 g) = 0.449 mW/g; SAR(10 g) = 0.350 mW/g

Maximum value of SAR (measured) = 0.472 mW/g

SCN/92490/063: Touch Left UMTS FDD 5 CH4132

Date: 13/03/2013

DUT: Sony Gaga Anna; Type: Gaga Anna; Serial: PM-0400-BV



Communication System: UMTS-FDD 5; Frequency: 826.4 MHz; Duty Cycle: 1:1

Medium: 900 MHz HSL Medium parameters used (interpolated): $f = 826.4$ MHz; $\sigma = 0.927$ mho/m; $\epsilon_r = 41.7$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(6.33, 6.33, 6.33); Calibrated: 11/05/2012

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn431; Calibrated: 20/09/2012

- Phantom: SAM 12b (Site 56); Type: SAM 4.0; Serial: TP:1020

- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Touch Left - Low/Area Scan (71x121x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.724 mW/g

Touch Left - Low/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 7.85 V/m; Power Drift = -0.026 dB

Peak SAR (extrapolated) = 0.903 W/kg

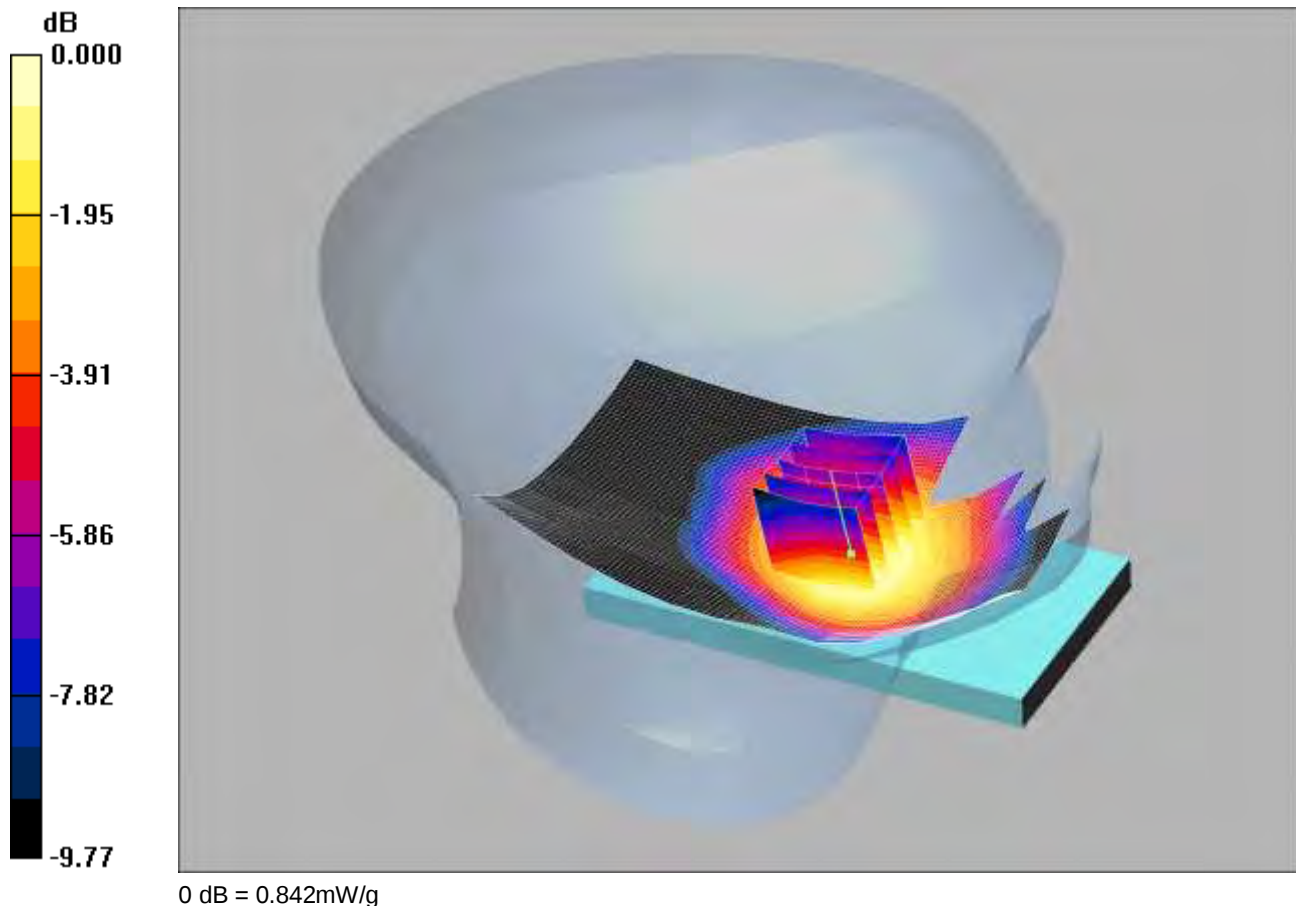
SAR(1 g) = 0.699 mW/g; SAR(10 g) = 0.516 mW/g

Maximum value of SAR (measured) = 0.733 mW/g

SCN/92490/064: Touch Left UMTS FDD 5 CH4233

Date: 13/03/2013

DUT: Sony Gaga Anna; Type: Gaga Anna; Serial: PM-0400-BV



Communication System: UMTS-FDD 5; Frequency: 846.6 MHz; Duty Cycle: 1:1

Medium: 900 MHz HSL Medium parameters used (interpolated): $f = 846.6$ MHz; $\sigma = 0.941$ mho/m; $\epsilon_r = 41.6$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(6.33, 6.33, 6.33); Calibrated: 11/05/2012

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn431; Calibrated: 20/09/2012

- Phantom: SAM 12b (Site 56); Type: SAM 4.0; Serial: TP:1020

- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Touch Left - High/Area Scan (71x121x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.832 mW/g

Touch Left - High/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 7.18 V/m; Power Drift = 0.073 dB

Peak SAR (extrapolated) = 1.02 W/kg

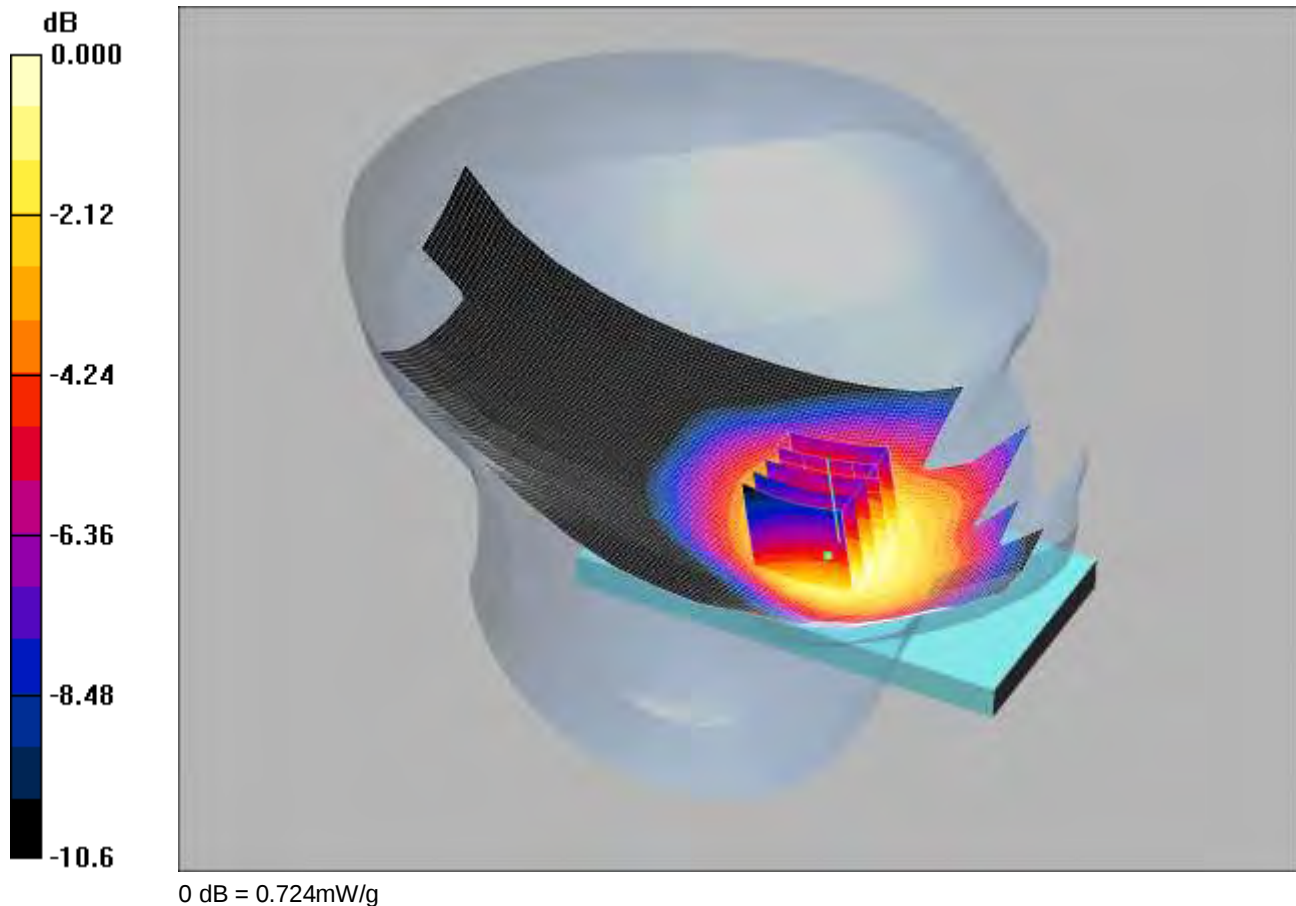
SAR(1 g) = 0.794 mW/g; SAR(10 g) = 0.587 mW/g

Maximum value of SAR (measured) = 0.842 mW/g

SCN/92490/065: Touch Left Antenna Extended UMTS FDD CH4233

Date: 13/03/2013

DUT: Sony Gaga Anna; Type: Gaga Anna; Serial: PM-0400-BV



Communication System: UMTS-FDD 5; Frequency: 846.6 MHz; Duty Cycle: 1:1

Medium: 900 MHz HSL Medium parameters used (interpolated): $f = 846.6$ MHz; $\sigma = 0.941$ mho/m; $\epsilon_r = 41.6$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(6.33, 6.33, 6.33); Calibrated: 11/05/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn431; Calibrated: 20/09/2012
- Phantom: SAM 12b (Site 56); Type: SAM 4.0; Serial: TP:1020
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Touch Leftt Antenna Extended - High/Area Scan (81x161x1): Measurement grid: dx=15mm, dy=15mm
 Maximum value of SAR (interpolated) = 0.756 mW/g

Touch Leftt Antenna Extended - High/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 7.95 V/m; Power Drift = 0.082 dB

Peak SAR (extrapolated) = 0.913 W/kg

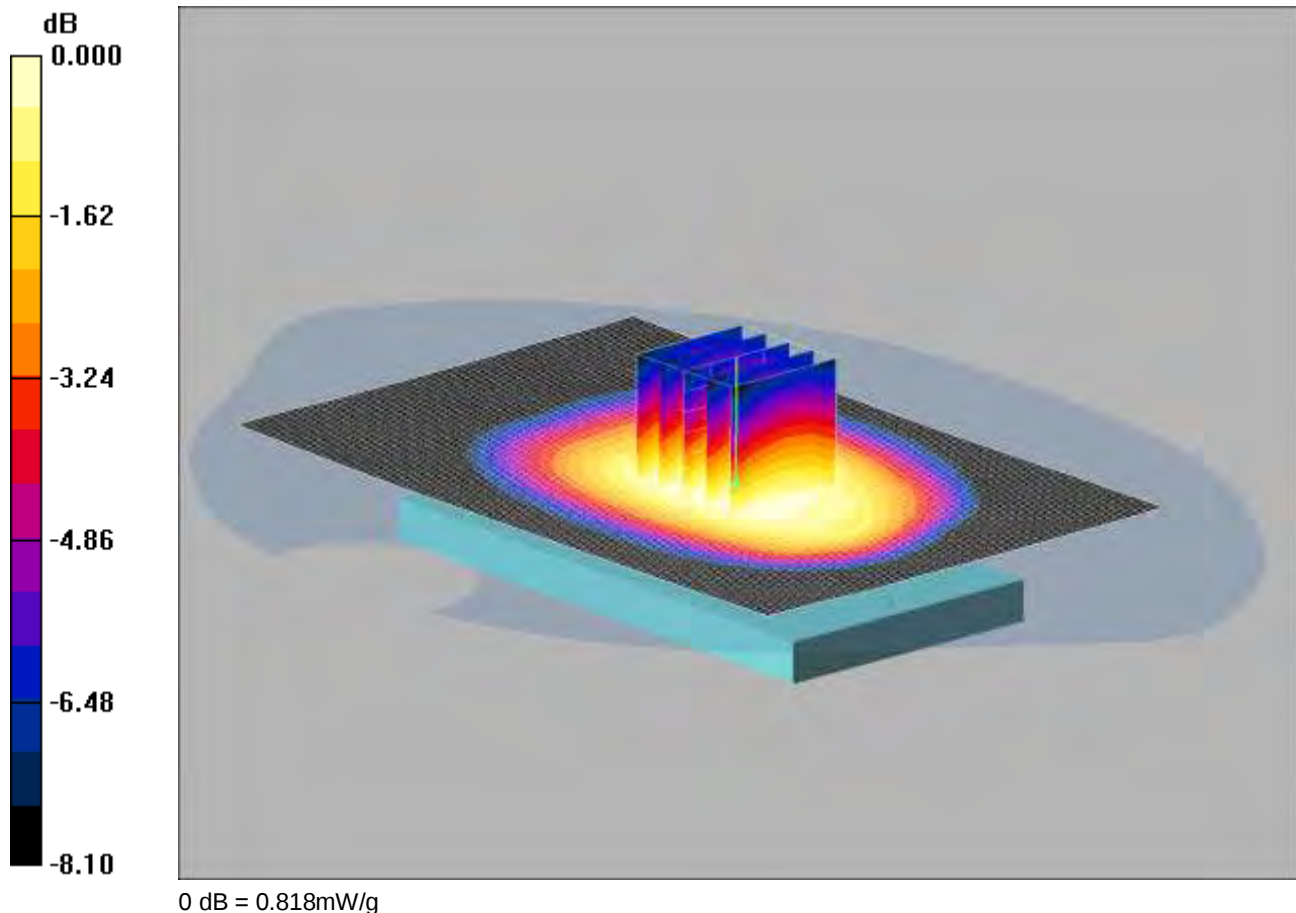
SAR(1 g) = 0.695 mW/g; SAR(10 g) = 0.514 mW/g

Maximum value of SAR (measured) = 0.724 mW/g

SCN/92490/066: Front of EUT Facing Phantom UMTS FDD 5 CH4183

Date: 15/03/2013

DUT: Sony Gaga Anna; Type: Gaga Anna; Serial: PM-0400-BV



Communication System: UMTS-FDD 5; Frequency: 836.6 MHz; Duty Cycle: 1:1

Medium: 900 MHz MSL Medium parameters used (interpolated): $f = 836.6$ MHz; $\sigma = 1.03$ mho/m; $\epsilon_r = 53.2$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(6.28, 6.28, 6.28); Calibrated: 11/05/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn431; Calibrated: 20/09/2012
- Phantom: SAM 12a (Site 56); Type: SAM 4.0; Serial: TP:1020
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Front of EUT Facing Phantom - Middle/Area Scan (81x121x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.832 mW/g

Front of EUT Facing Phantom - Middle/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 29.0 V/m; Power Drift = -0.041 dB

Peak SAR (extrapolated) = 0.929 W/kg

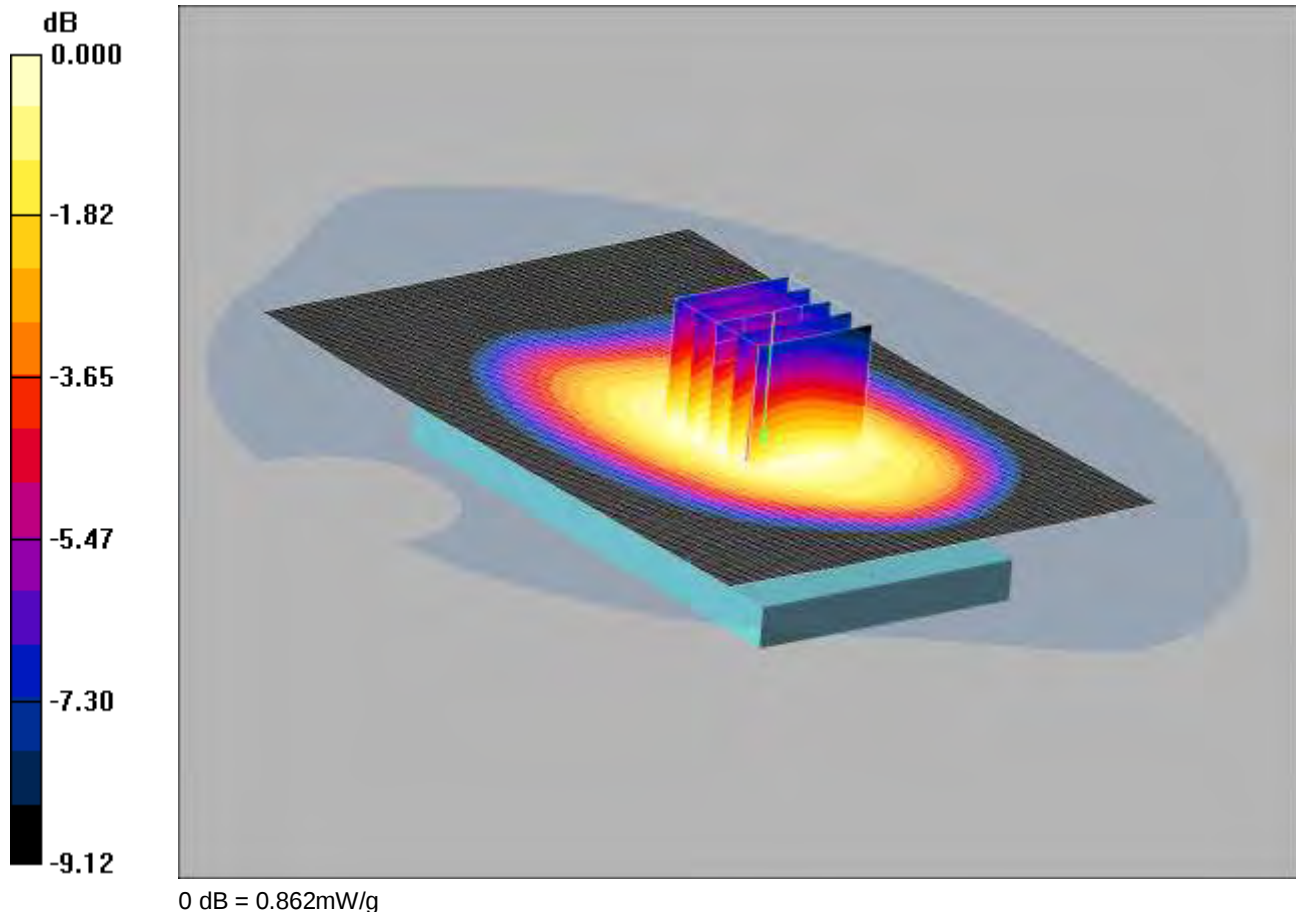
SAR(1 g) = 0.780 mW/g; SAR(10 g) = 0.604 mW/g

Maximum value of SAR (measured) = 0.818 mW/g

SCN/92490/067: Back of EUT Facing Phantom UMTS FDD 5 CH4183

Date 15/03/2013

DUT: Sony Gaga Anna; Type: Gaga Anna; Serial: PM-0400-BV



Communication System: UMTS-FDD 5; Frequency: 836.6 MHz; Duty Cycle: 1:1

Medium: 900 MHz MSL Medium parameters used (interpolated): $f = 836.6$ MHz; $\sigma = 1.03$ mho/m; $\epsilon_r = 53.2$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(6.28, 6.28, 6.28); Calibrated: 11/05/2012

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn431; Calibrated: 20/09/2012

- Phantom: SAM 12a (Site 56); Type: SAM 4.0; Serial: TP:1020

- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Back of EUT Facing Phantom - Middle/Area Scan (81x121x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.865 mW/g

Back of EUT Facing Phantom - Middle/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 29.3 V/m; Power Drift = 0.005 dB

Peak SAR (extrapolated) = 0.989 W/kg

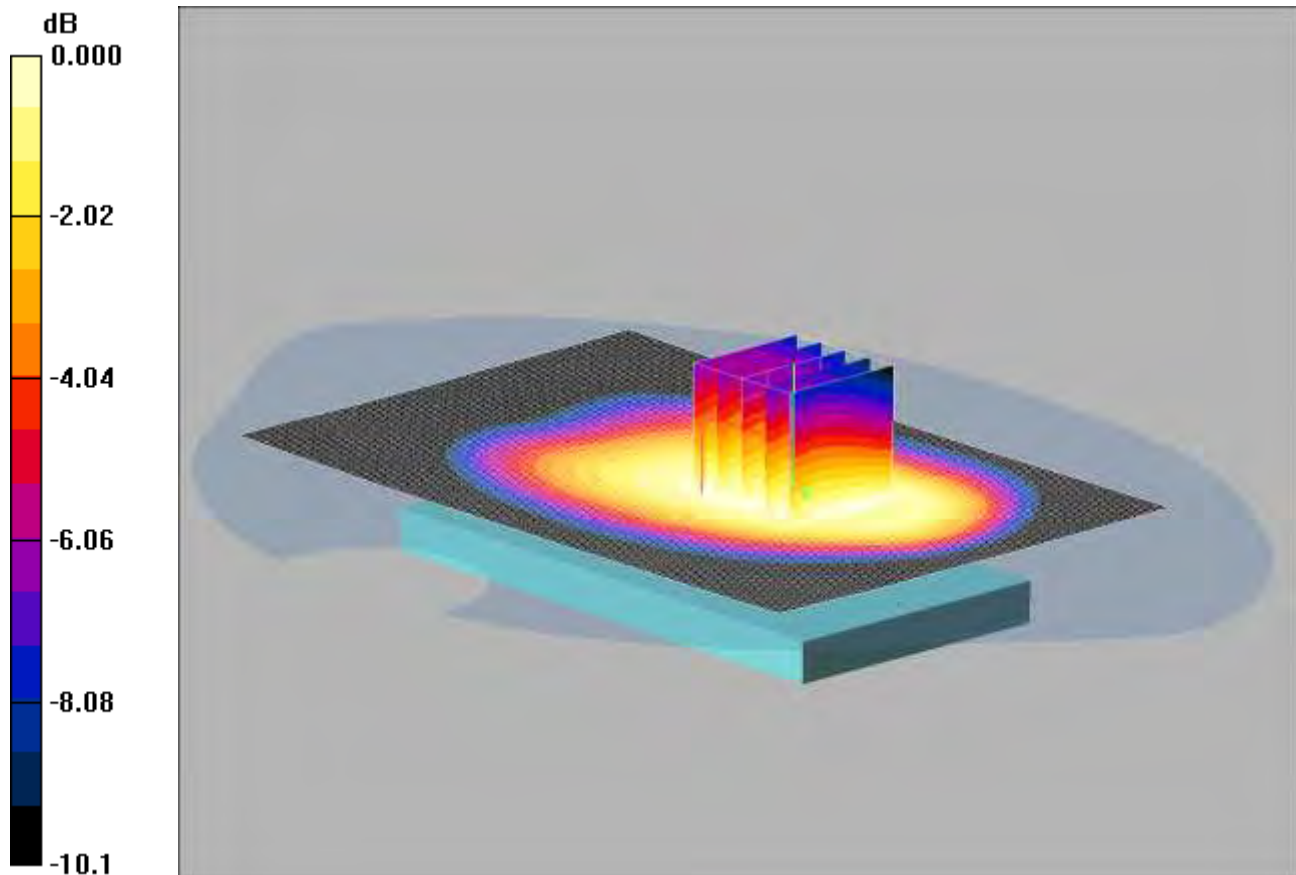
SAR(1 g) = 0.824 mW/g; SAR(10 g) = 0.632 mW/g

Maximum value of SAR (measured) = 0.862 mW/g

SCN/92490/068: Back of EUT Facing Phantom UMTS FDD 5 CH4132

Date: 18/03/2013

DUT: Sony Gaga Anna; Type: Gaga Anna; Serial: PM-0400-BV



0 dB = 1.00mW/g

Communication System: UMTS-FDD 5; Frequency: 826.4 MHz; Duty Cycle: 1:1

Medium: 900 MHz MSL Medium parameters used (interpolated): $f = 826.4$ MHz; $\sigma = 1.01$ mho/m; $\epsilon_r = 53.3$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(6.28, 6.28, 6.28); Calibrated: 11/05/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn431; Calibrated: 20/09/2012
- Phantom: SAM 12a (Site 56); Type: SAM 4.0; Serial: TP:1020
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Back of EUT Facing Phantom - Low/Area Scan (81x121x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.01 mW/g

Back of EUT Facing Phantom - Low/Zoom Scan (5x5x7) 2 (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 31.3 V/m; Power Drift = 0.008 dB

Peak SAR (extrapolated) = 1.19 W/kg

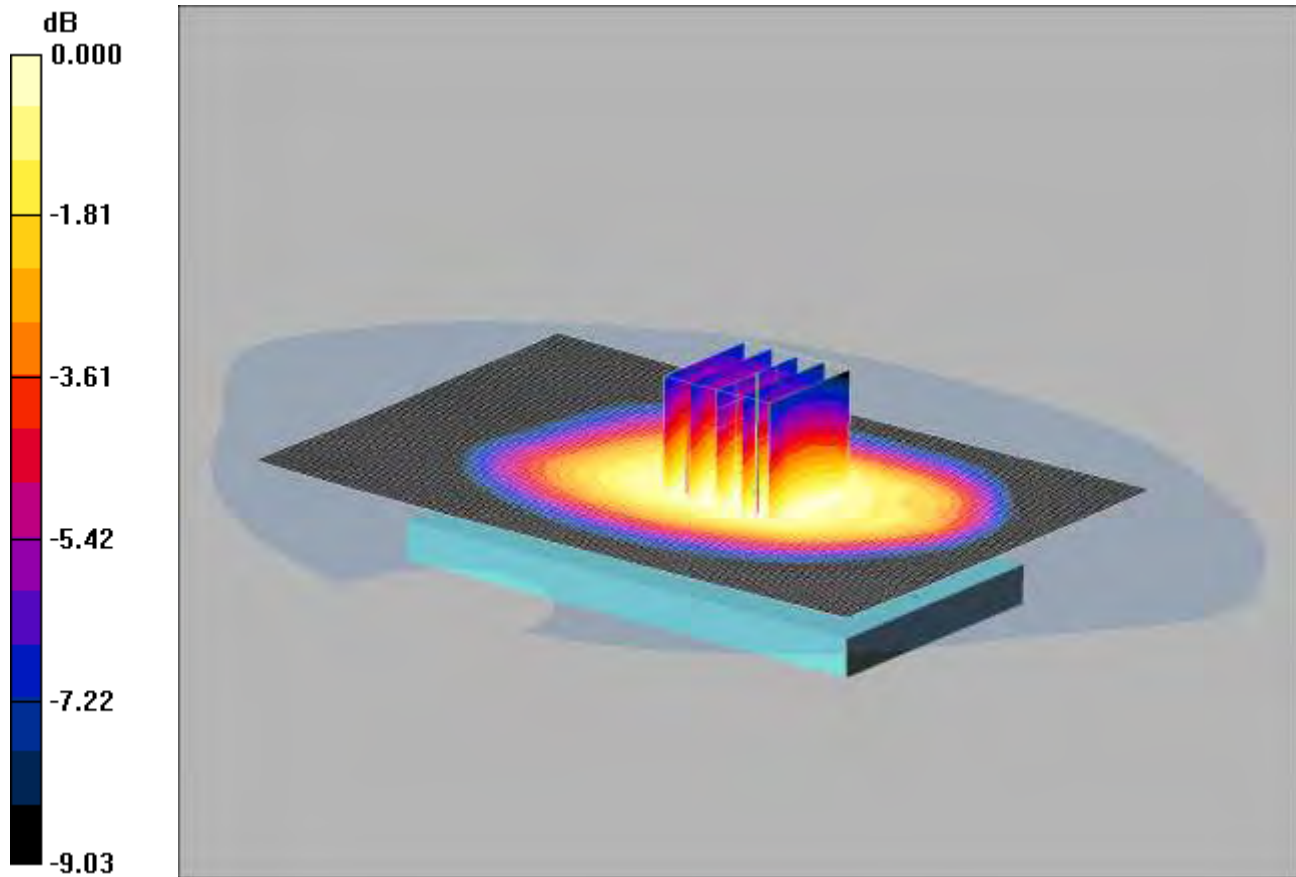
SAR(1 g) = 0.955 mW/g; SAR(10 g) = 0.731 mW/g

Maximum value of SAR (measured) = 1.00 mW/g

SCN/92490/069: Back of EUT Facing Phantom UMTS FDD 5 CH4233

Date: 15/03/2013

DUT: Sony Gaga Anna; Type: Gaga Anna; Serial: PM-0400-BV



0 dB = 0.981mW/g

Communication System: UMTS-FDD 5; Frequency: 846.6 MHz; Duty Cycle: 1:1

Medium: 900 MHz MSL Medium parameters used (interpolated): $f = 846.6$ MHz; $\sigma = 1.04$ mho/m; $\epsilon_r = 53.2$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(6.28, 6.28, 6.28); Calibrated: 11/05/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn431; Calibrated: 20/09/2012
- Phantom: SAM 12a (Site 56); Type: SAM 4.0; Serial: TP:1020
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Back of EUT Facing Phantom - High/Area Scan (81x121x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.976 mW/g

Back of EUT Facing Phantom - High/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 31.9 V/m; Power Drift = -0.160 dB

Peak SAR (extrapolated) = 1.13 W/kg

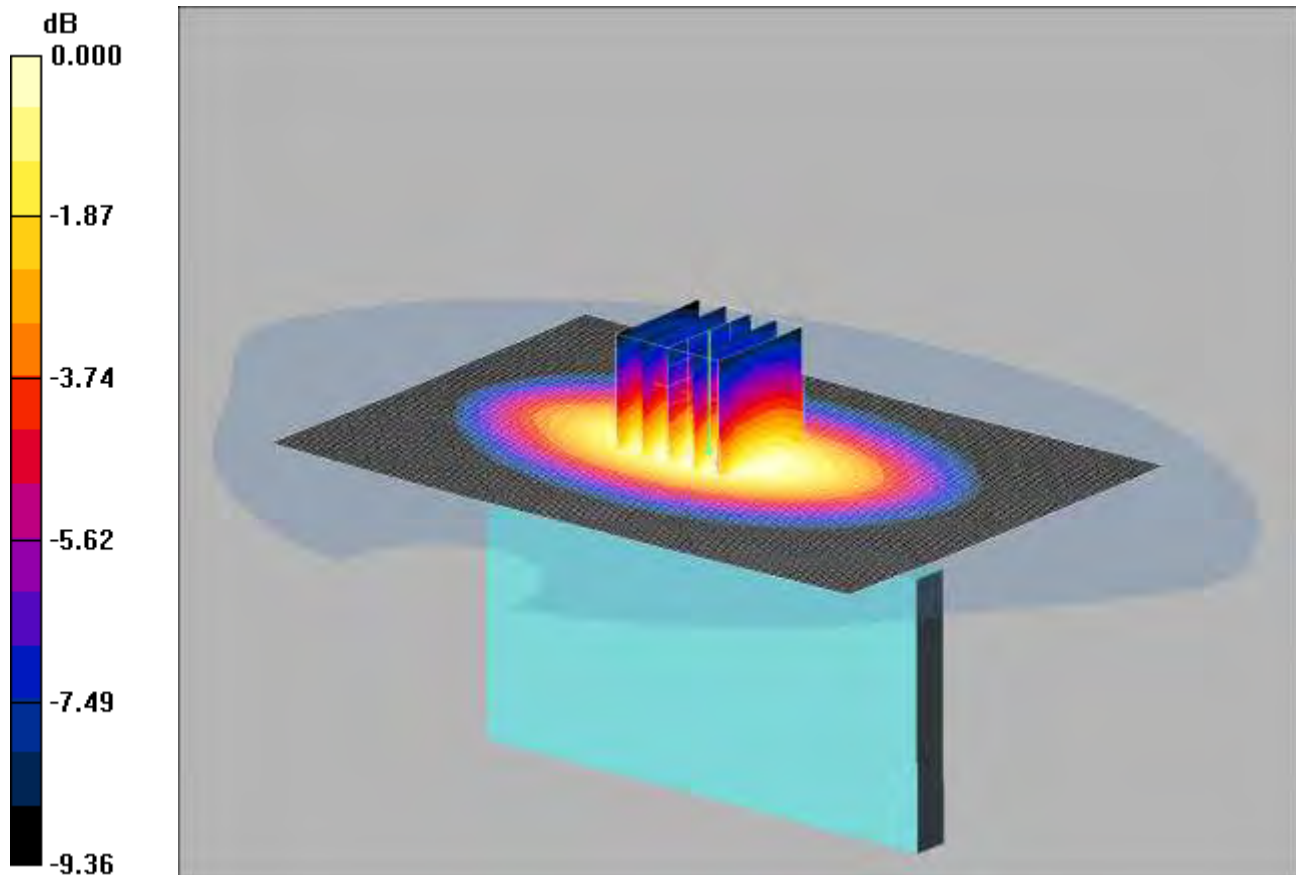
SAR(1 g) = 0.935 mW/g; SAR(10 g) = 0.714 mW/g

Maximum value of SAR (measured) = 0.981 mW/g

SCN/92490/070: Left Hand Side of EUT Facing Phantom UMTS FDD 5 CH4183

Date: 18/03/2013

DUT: Sony Gaga Anna; Type: Gaga Anna; Serial: PM-0400-BV



0 dB = 0.647mW/g

Communication System: UMTS-FDD 5; Frequency: 836.6 MHz; Duty Cycle: 1:1

Medium: 900 MHz MSL Medium parameters used (interpolated): $f = 836.6$ MHz; $\sigma = 1.01$ mho/m; $\epsilon_r = 53.2$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(6.28, 6.28, 6.28); Calibrated: 11/05/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn431; Calibrated: 20/09/2012
- Phantom: SAM 12a (Site 56); Type: SAM 4.0; Serial: TP:1020
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Left Hand Side of EUT Facing Phantom - Middle/Area Scan (81x121x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.673 mW/g

Left Hand Side of EUT Facing Phantom - Middle/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 26.5 V/m; Power Drift = -0.016 dB

Peak SAR (extrapolated) = 0.802 W/kg

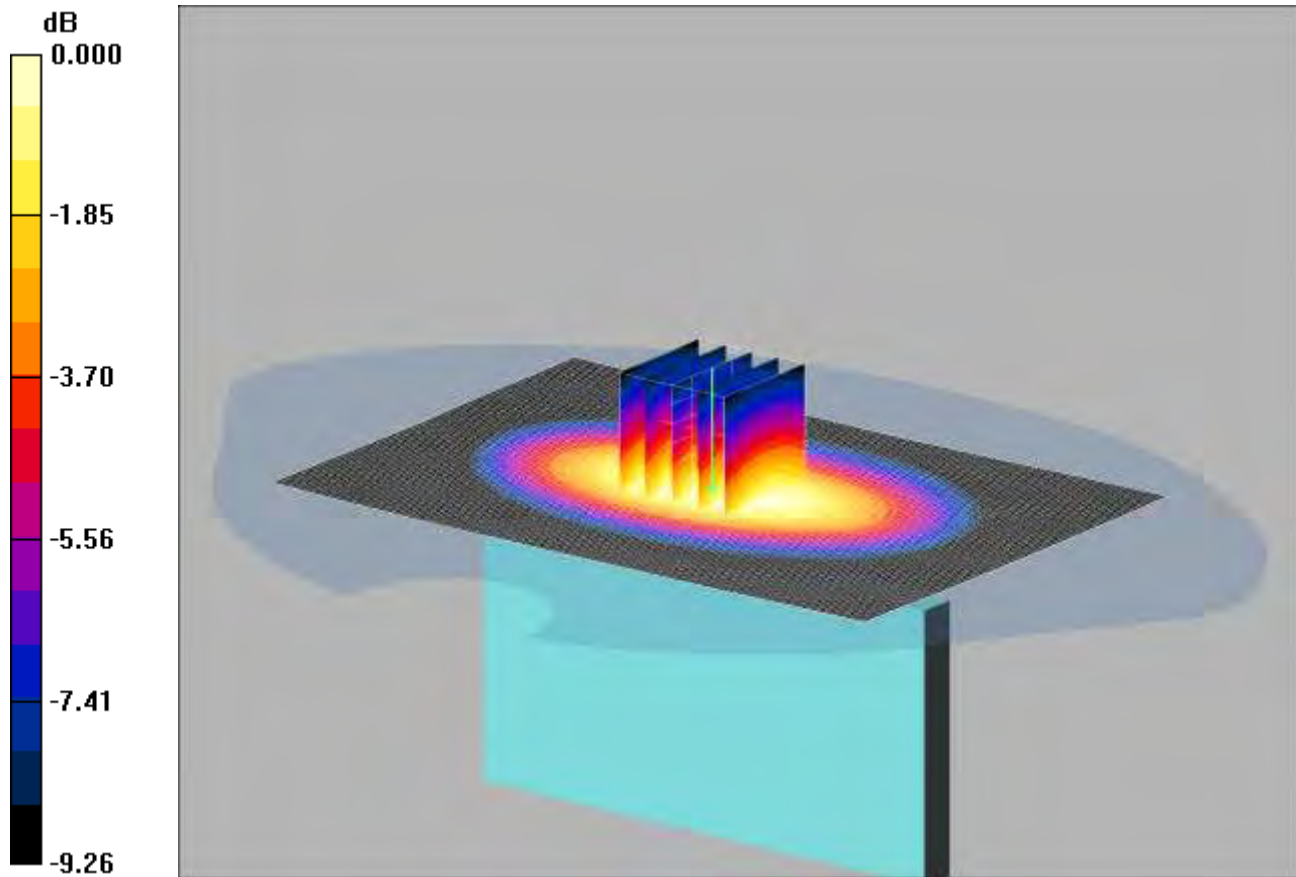
SAR(1 g) = 0.606 mW/g; SAR(10 g) = 0.428 mW/g

Maximum value of SAR (measured) = 0.647 mW/g

SCN/92490/071: Right Hand Side of EUT Facing Phantom UMTS FDD 5 CH4183

Date: 18/03/2013

DUT: Sony Gaga Anna; Type: Gaga Anna; Serial: PM-0400-BV



0 dB = 0.741mW/g

Communication System: UMTS-FDD 5; Frequency: 836.6 MHz; Duty Cycle: 1:1

Medium: 900 MHz MSL Medium parameters used (interpolated): $f = 836.6$ MHz; $\sigma = 1.01$ mho/m; $\epsilon_r = 53.2$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(6.28, 6.28, 6.28); Calibrated: 11/05/2012

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn431; Calibrated: 20/09/2012

- Phantom: SAM 12a (Site 56); Type: SAM 4.0; Serial: TP:1020

- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Right Hand Side of EUT Facing Phantom - Middle/Area Scan (81x121x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.748 mW/g

Right Hand Side of EUT Facing Phantom - Middle/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 27.8 V/m; Power Drift = 0.055 dB

Peak SAR (extrapolated) = 0.914 W/kg

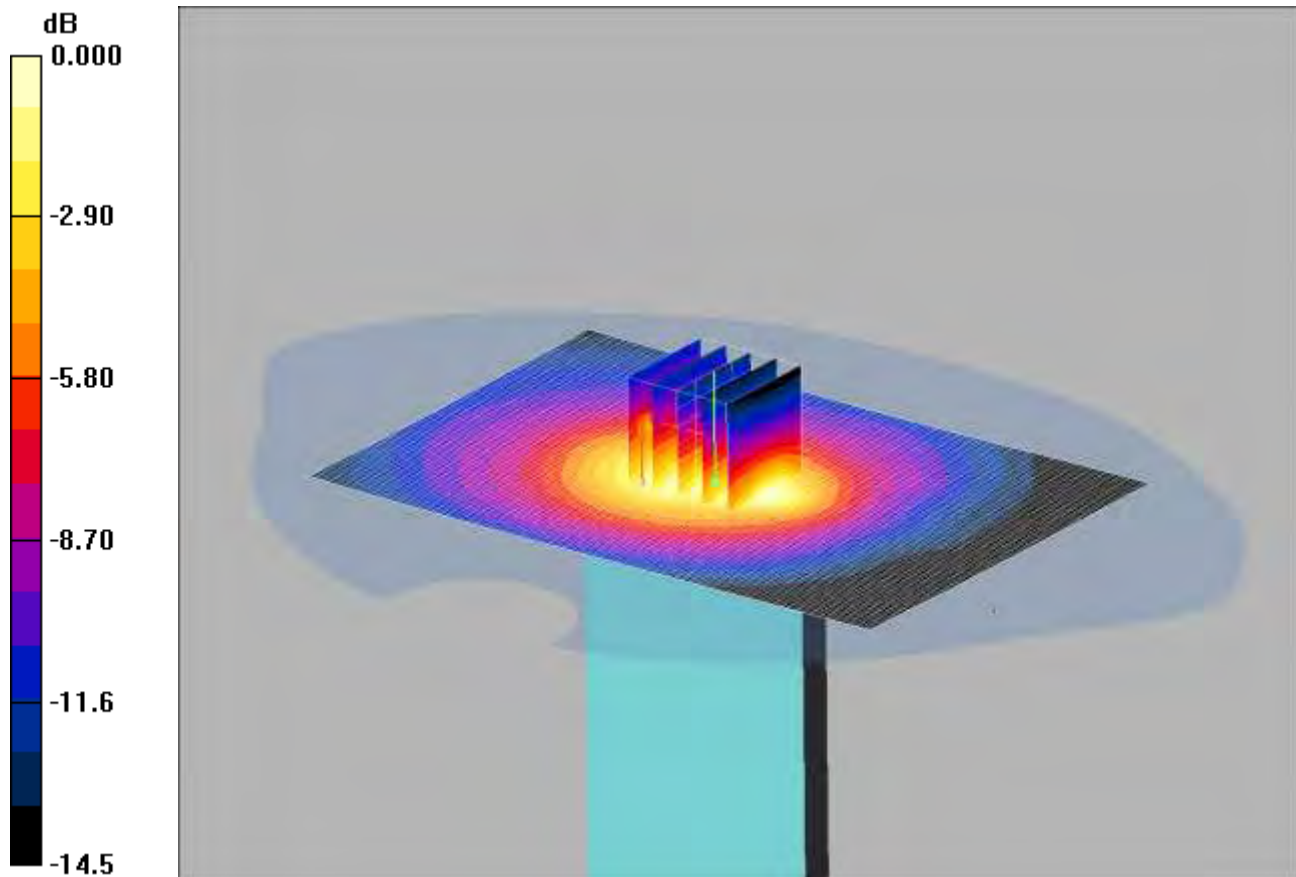
SAR(1 g) = 0.693 mW/g; SAR(10 g) = 0.487 mW/g

Maximum value of SAR (measured) = 0.741 mW/g

SCN/92490/072: Bottom of EUT Facing Phantom UMTS FDD 5 CH4183

Date: 18/03/2013

DUT: Sony Gaga Anna; Type: Gaga Anna; Serial: PM-0400-BV



0 dB = 0.194mW/g

Communication System: UMTS-FDD 5; Frequency: 836.6 MHz; Duty Cycle: 1:1

Medium: 900 MHz MSL Medium parameters used (interpolated): $f = 836.6$ MHz; $\sigma = 1.01$ mho/m; $\epsilon_r = 53.2$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(6.28, 6.28, 6.28); Calibrated: 11/05/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn431; Calibrated: 20/09/2012
- Phantom: SAM 12a (Site 56); Type: SAM 4.0; Serial: TP:1020
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Bottom of EUT Facing Phantom - Middle/Area Scan (81x121x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.195 mW/g

Bottom of EUT Facing Phantom - Middle/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 14.2 V/m; Power Drift = 0.000 dB

Peak SAR (extrapolated) = 0.406 W/kg

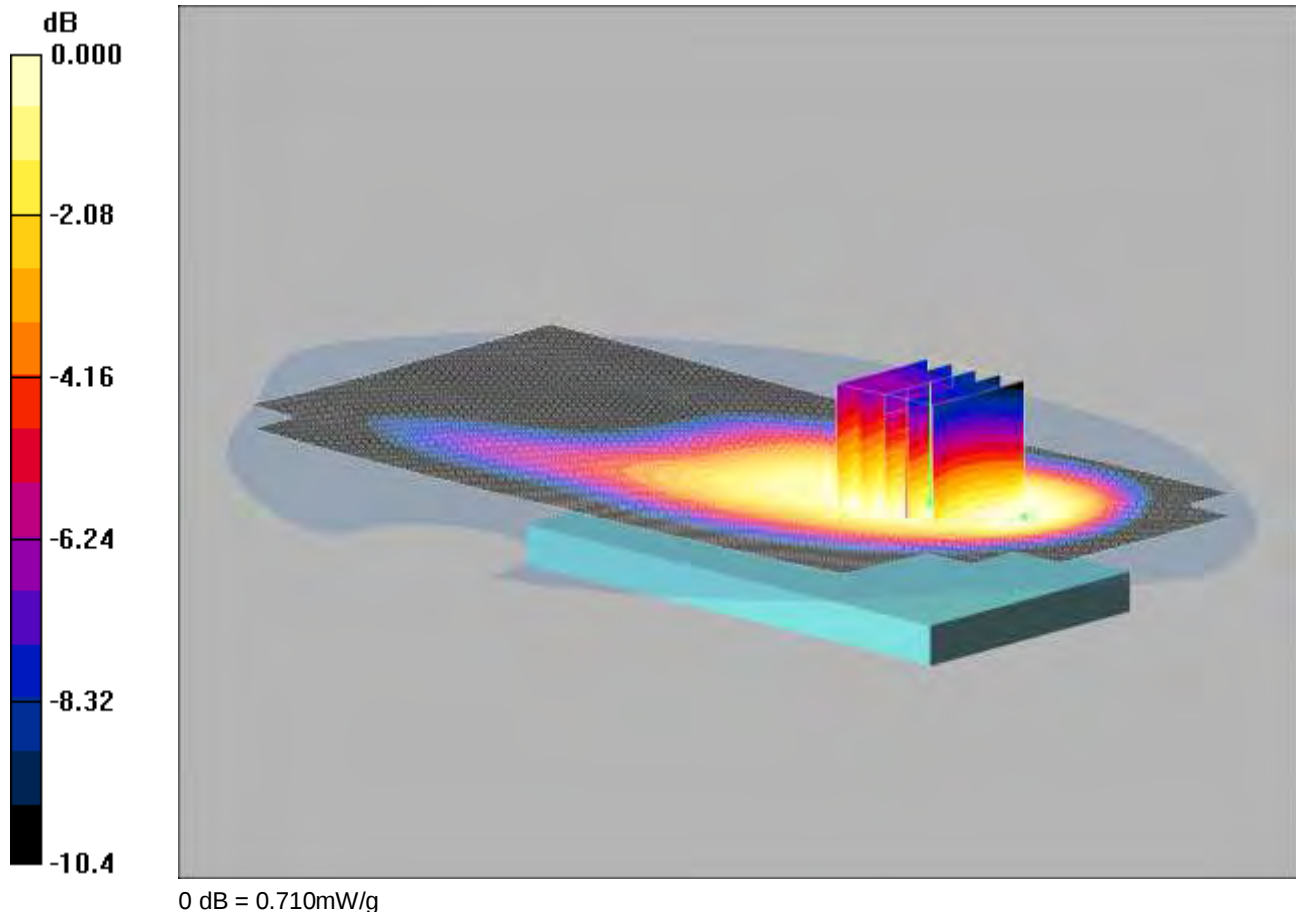
SAR(1 g) = 0.179 mW/g; SAR(10 g) = 0.099 mW/g

Maximum value of SAR (measured) = 0.194 mW/g

SCN/92490/073: Back of EUT Antenna Extended Facing Phantom UMTS FDD 5 CH4132

Date: 18/03/2013

DUT: Sony Gaga Anna; Type: Gaga Anna; Serial: PM-0400-BV



Communication System: UMTS-FDD 5; Frequency: 826.4 MHz; Duty Cycle: 1:1

Medium: 900 MHz MSL Medium parameters used (interpolated): $f = 826.4$ MHz; $\sigma = 1.01$ mho/m; $\epsilon_r = 53.3$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(6.28, 6.28, 6.28); Calibrated: 11/05/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn431; Calibrated: 20/09/2012
- Phantom: SAM 12a (Site 56); Type: SAM 4.0; Serial: TP:1020
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Back of EUT Facing Phantom - Low/Area Scan (81x161x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.724 mW/g

Back of EUT Facing Phantom - Low/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 18.5 V/m; Power Drift = 0.003 dB

Peak SAR (extrapolated) = 0.949 W/kg

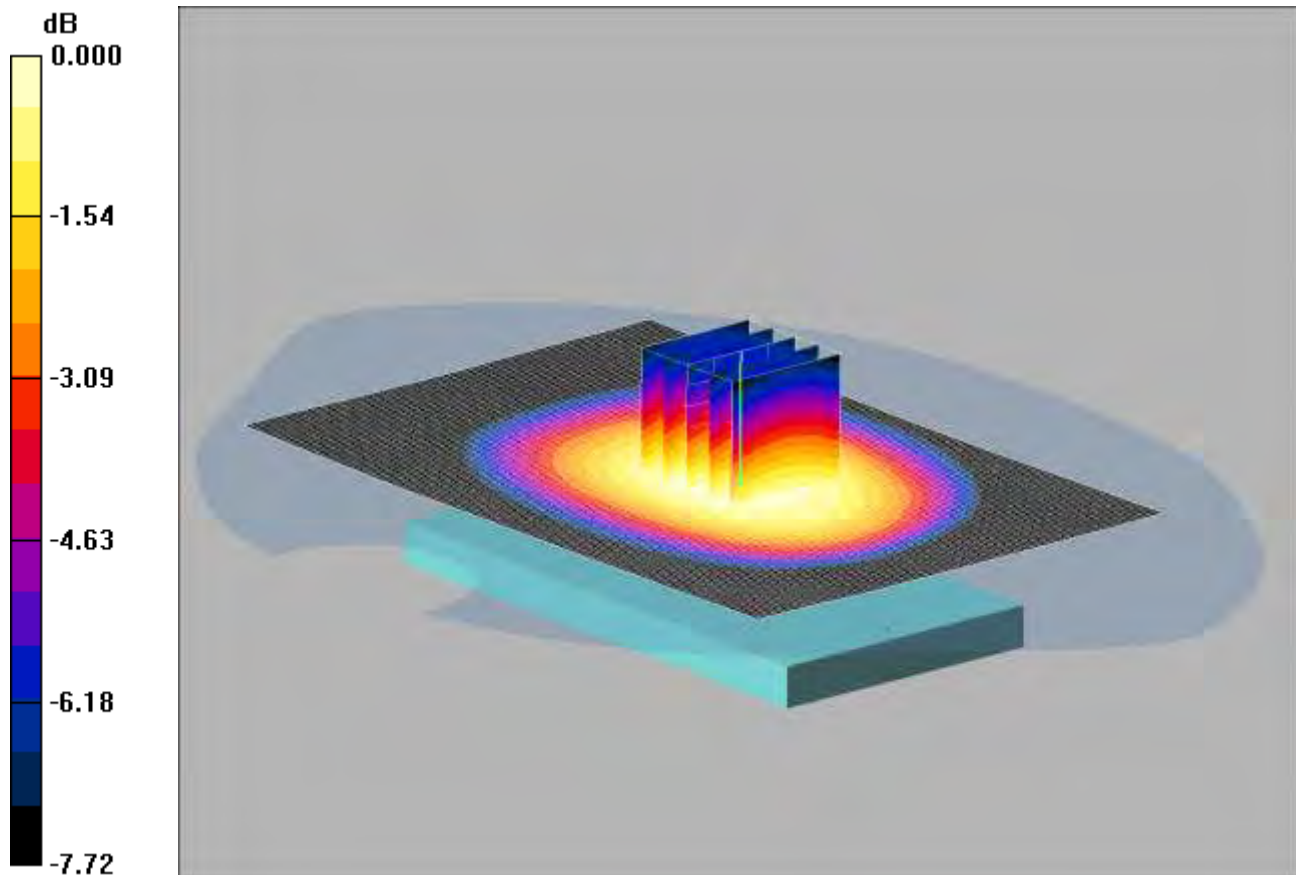
SAR(1 g) = 0.673 mW/g; SAR(10 g) = 0.504 mW/g

Maximum value of SAR (measured) = 0.710 mW/g

SCN/92490/074: Front of EUT Facing Phantom at 15mm UMTS FDD 5 CH4132

Date: 18/03/2013

DUT: Sony Gaga Anna; Type: Gaga Anna; Serial: PM-0400-BV



0 dB = 0.716mW/g

Communication System: UMTS-FDD 5; Frequency: 826.4 MHz; Duty Cycle: 1:1

Medium: 900 MHz MSL Medium parameters used (interpolated): $f = 826.4$ MHz; $\sigma = 1.01$ mho/m; $\epsilon_r = 53.3$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(6.28, 6.28, 6.28); Calibrated: 11/05/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn431; Calibrated: 20/09/2012
- Phantom: SAM 12a (Site 56); Type: SAM 4.0; Serial: TP:1020
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Front of EUT Facing Phantom - Low/Area Scan (81x121x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.713 mW/g

Front of EUT Facing Phantom - Low/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 27.4 V/m; Power Drift = -0.006 dB

Peak SAR (extrapolated) = 0.806 W/kg

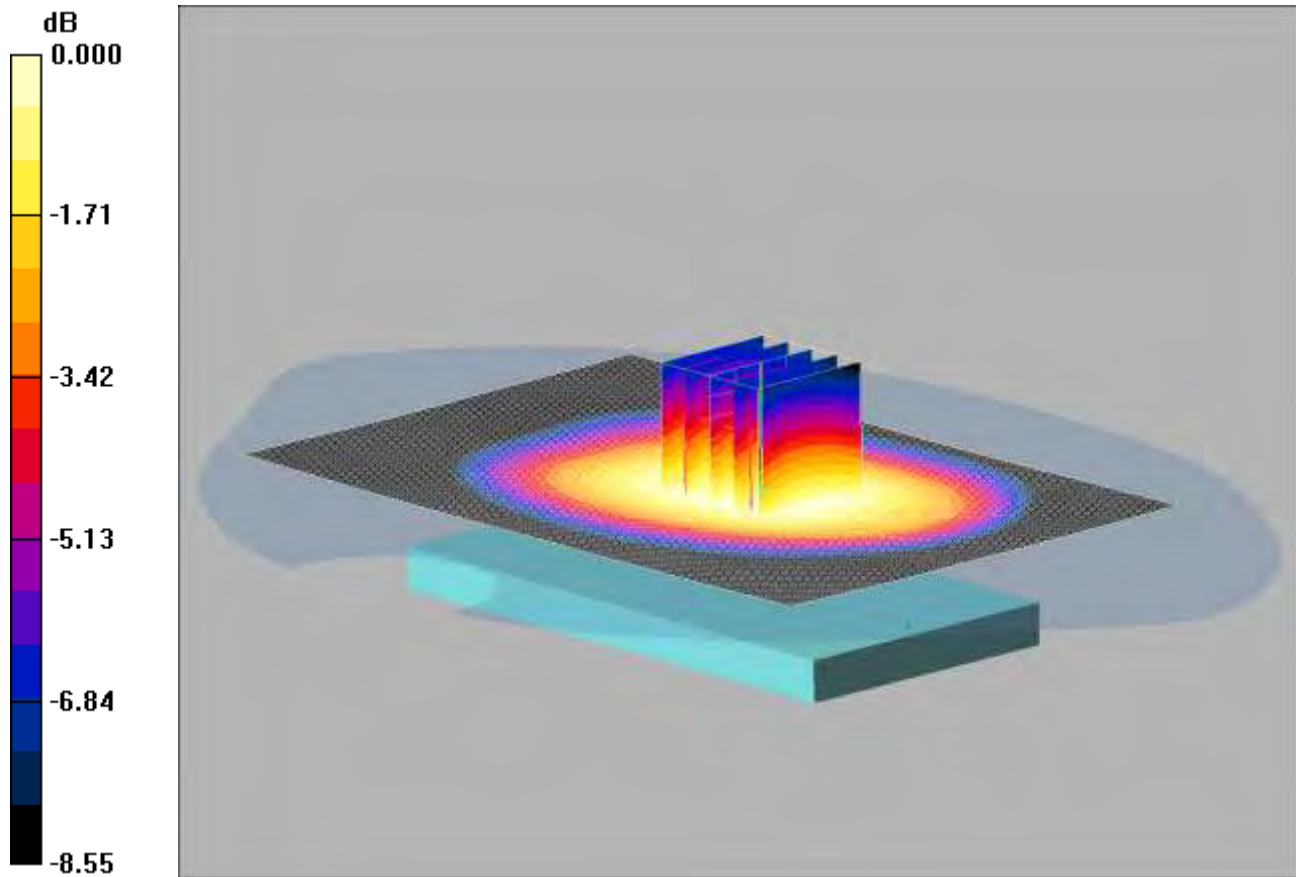
SAR(1 g) = 0.682 mW/g; SAR(10 g) = 0.527 mW/g

Maximum value of SAR (measured) = 0.716 mW/g

SCN/92490/075: Back of EUT Facing Phantom at 15mm UMTS FDD 5 CH4132

Date: 18/03/2013

DUT: Sony Gaga Anna; Type: Gaga Anna; Serial: PM-0400-BV



0 dB = 0.794mW/g

Communication System: UMTS-FDD 5; Frequency: 826.4 MHz; Duty Cycle: 1:1

Medium: 900 MHz MSL Medium parameters used (interpolated): $f = 826.4$ MHz; $\sigma = 1.01$ mho/m; $\epsilon_r = 53.3$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(6.28, 6.28, 6.28); Calibrated: 11/05/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn431; Calibrated: 20/09/2012
- Phantom: SAM 12a (Site 56); Type: SAM 4.0; Serial: TP:1020
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Back of EUT Facing Phantom - Low/Area Scan (81x121x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.803 mW/g

Back of EUT Facing Phantom - Low/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 28.5 V/m; Power Drift = 0.078 dB

Peak SAR (extrapolated) = 0.907 W/kg

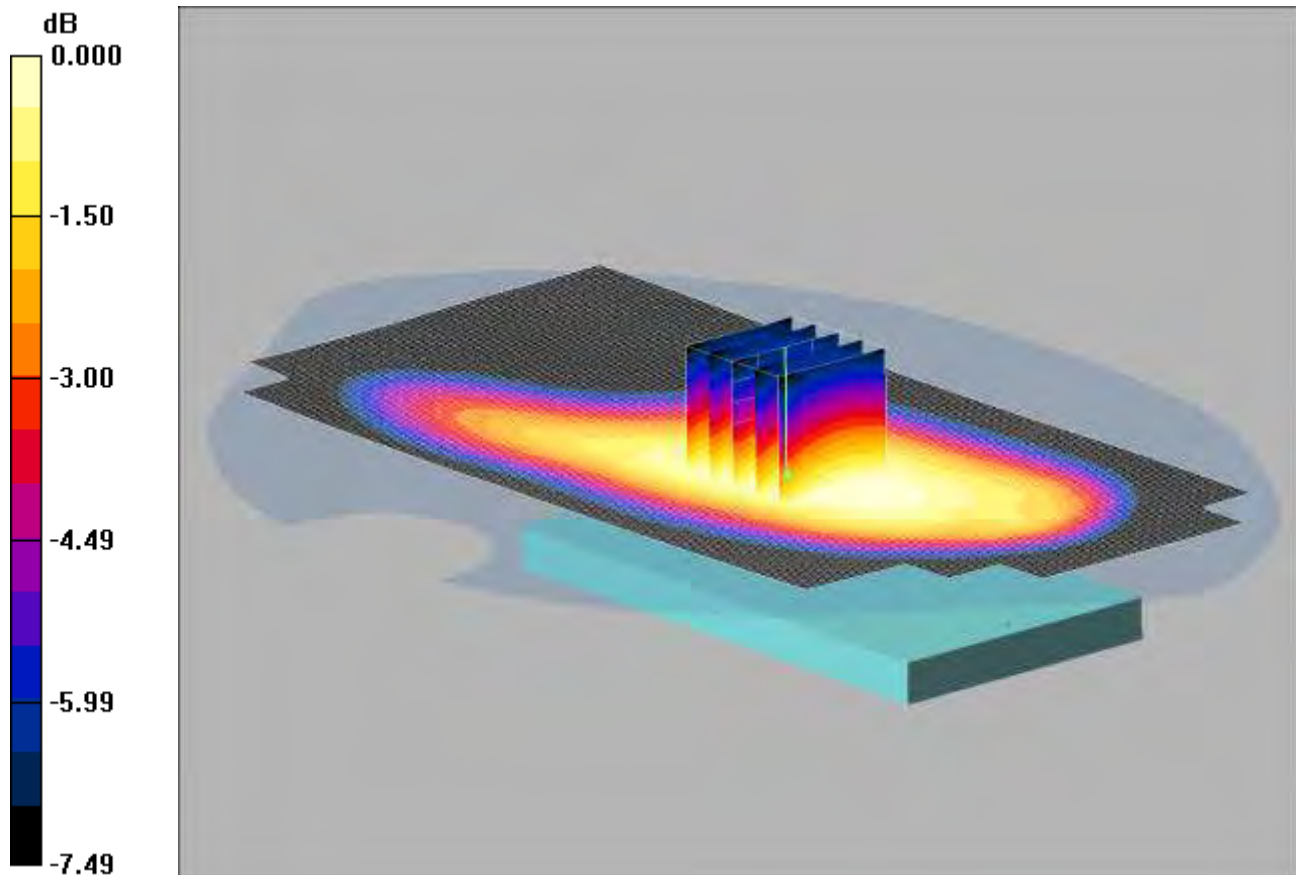
SAR(1 g) = 0.754 mW/g; SAR(10 g) = 0.576 mW/g

Maximum value of SAR (measured) = 0.794 mW/g

SCN/92490/076: Back of EUT Antenna Extended Facing Phantom at 15mm UMTS FDD 5 CH4132

Date: 18/03/2013

DUT: Sony Gaga Anna; Type: Gaga Anna; Serial: PM-0400-BV



0 dB = 0.456mW/g

Communication System: UMTS-FDD 5; Frequency: 826.4 MHz; Duty Cycle: 1:1

Medium: 900 MHz MSL Medium parameters used (interpolated): $f = 826.4$ MHz; $\sigma = 1.01$ mho/m; $\epsilon_r = 53.3$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(6.28, 6.28, 6.28); Calibrated: 11/05/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn431; Calibrated: 20/09/2012
- Phantom: SAM 12a (Site 56); Type: SAM 4.0; Serial: TP:1020
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Back of EUT Facing Phantom - Low/Area Scan (81x161x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.455 mW/g

Back of EUT Facing Phantom - Low/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 19.1 V/m; Power Drift = -0.001 dB

Peak SAR (extrapolated) = 0.522 W/kg

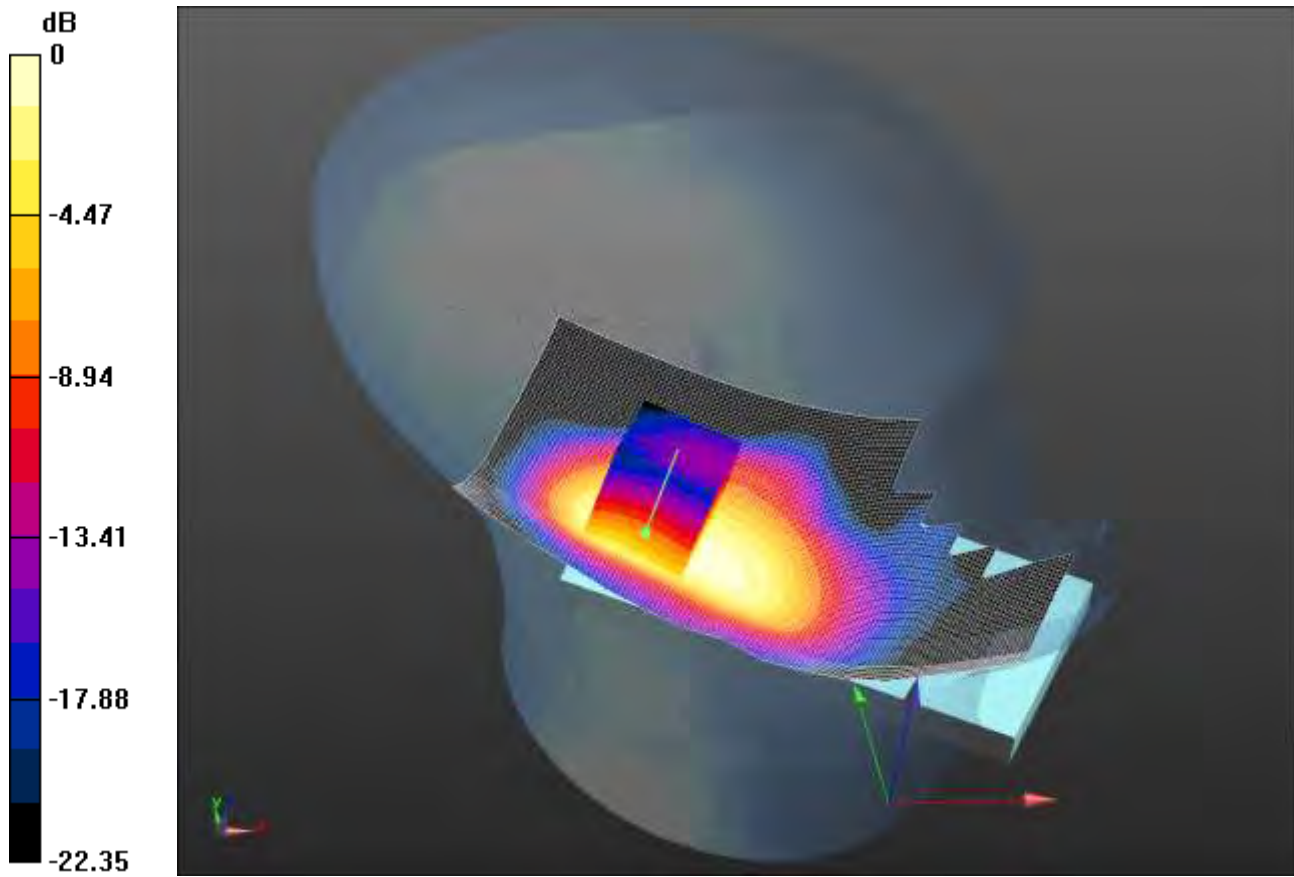
SAR(1 g) = 0.434 mW/g; SAR(10 g) = 0.332 mW/g

Maximum value of SAR (measured) = 0.456 mW/g

SCN/92490/077: Touch Left WiFi 802.11b 1Mbps CH6

Date: 02/04/2013

DUT: Sony Gaga Anna; Type: Gaga Anna; Serial: PM-0400-BV



0 dB = 0.438 W/kg = -3.59 dBW/kg

Communication System: WLAN 802.11; Frequency: 2437 MHz; Duty Cycle: 1:1

Medium: 2450 MHz HSL Medium parameters used (interpolated): $f = 2437$ MHz; $\sigma = 1.858$ mho/m; $\epsilon_r = 39.092$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3814; ConvF(6.89, 6.89, 6.89); Calibrated: 24/09/2012;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn450; Calibrated: 22/01/2013
- Phantom: SAM A (Site 58); Type: QD000P40Ca; Serial: TP:1193
- ; SEMCAD X Version 14.6.7 (6848)

Configuration/Touch Left- Middle/Area Scan (91x151x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm

Maximum value of SAR (interpolated) = 0.464 W/kg

Configuration/Touch Left- Middle/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 9.334 V/m; Power Drift = -0.00 dB

Peak SAR (extrapolated) = 0.554 W/kg

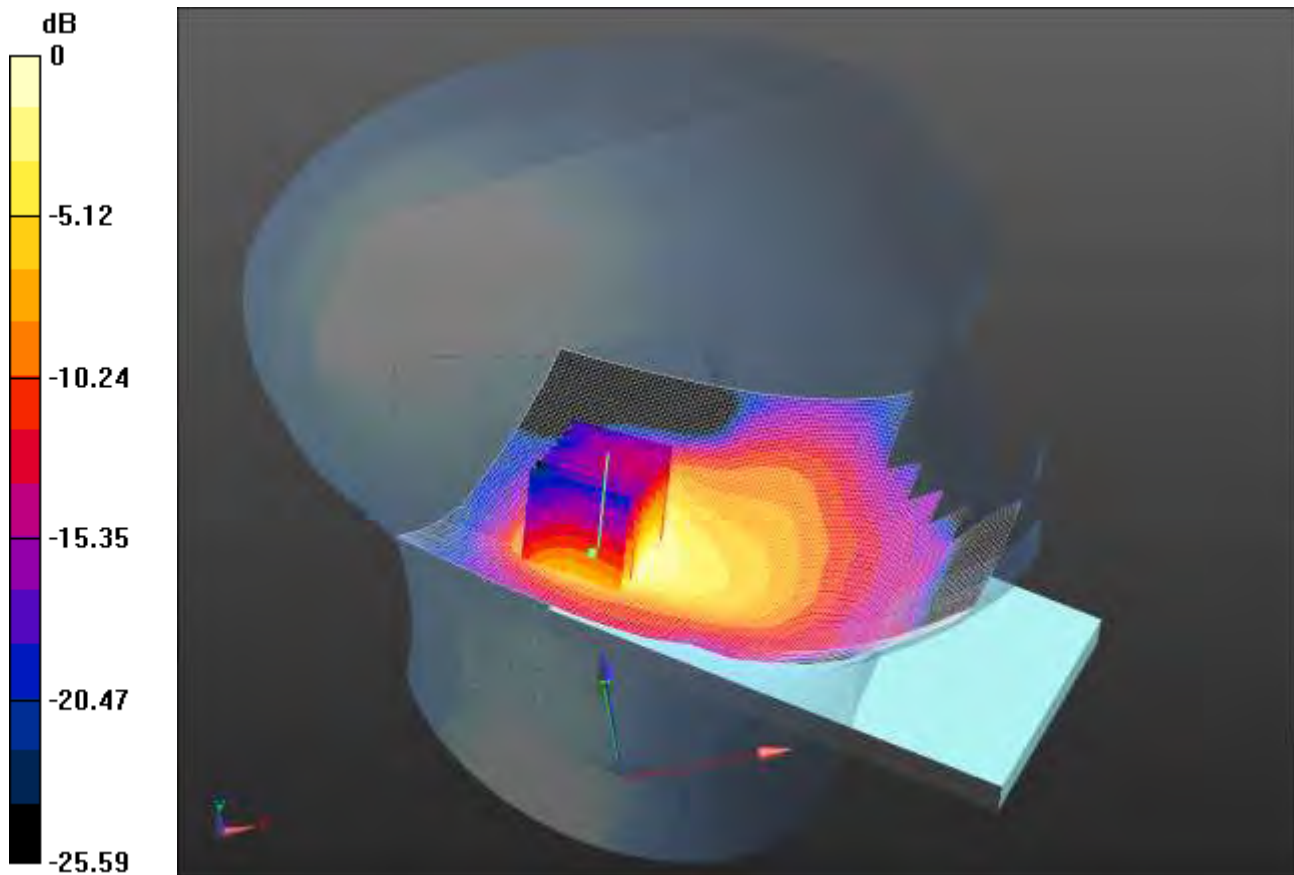
SAR(1 g) = 0.323 W/kg; SAR(10 g) = 0.177 W/kg

Maximum value of SAR (measured) = 0.438 W/kg

SCN/92490/078: Tilt Left WiFi 802.11b 1Mbps CH6

Date: 02/04/2013

DUT: Sony Gaga Anna; Type: Gaga Anna; Serial: PM-0400-BV



0 dB = 0.264 W/kg = -5.78 dBW/kg

Communication System: WLAN 802.11; Frequency: 2437 MHz; Duty Cycle: 1:1

Medium: 2450 MHz HSL Medium parameters used (interpolated): $f = 2437$ MHz; $\sigma = 1.858$ mho/m; $\epsilon_r = 39.092$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3814; ConvF(6.89, 6.89, 6.89); Calibrated: 24/09/2012;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn450; Calibrated: 22/01/2013
- Phantom: SAM A (Site 58); Type: QD000P40Ca; Serial: TP:1193
- ; SEMCAD X Version 14.6.7 (6848)

Configuration/Tilt Left- Middle/Area Scan (91x151x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm

Maximum value of SAR (interpolated) = 0.293 W/kg

Configuration/Tilt Left- Middle/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 8.391 V/m; Power Drift = 0.12 dB

Peak SAR (extrapolated) = 0.336 W/kg

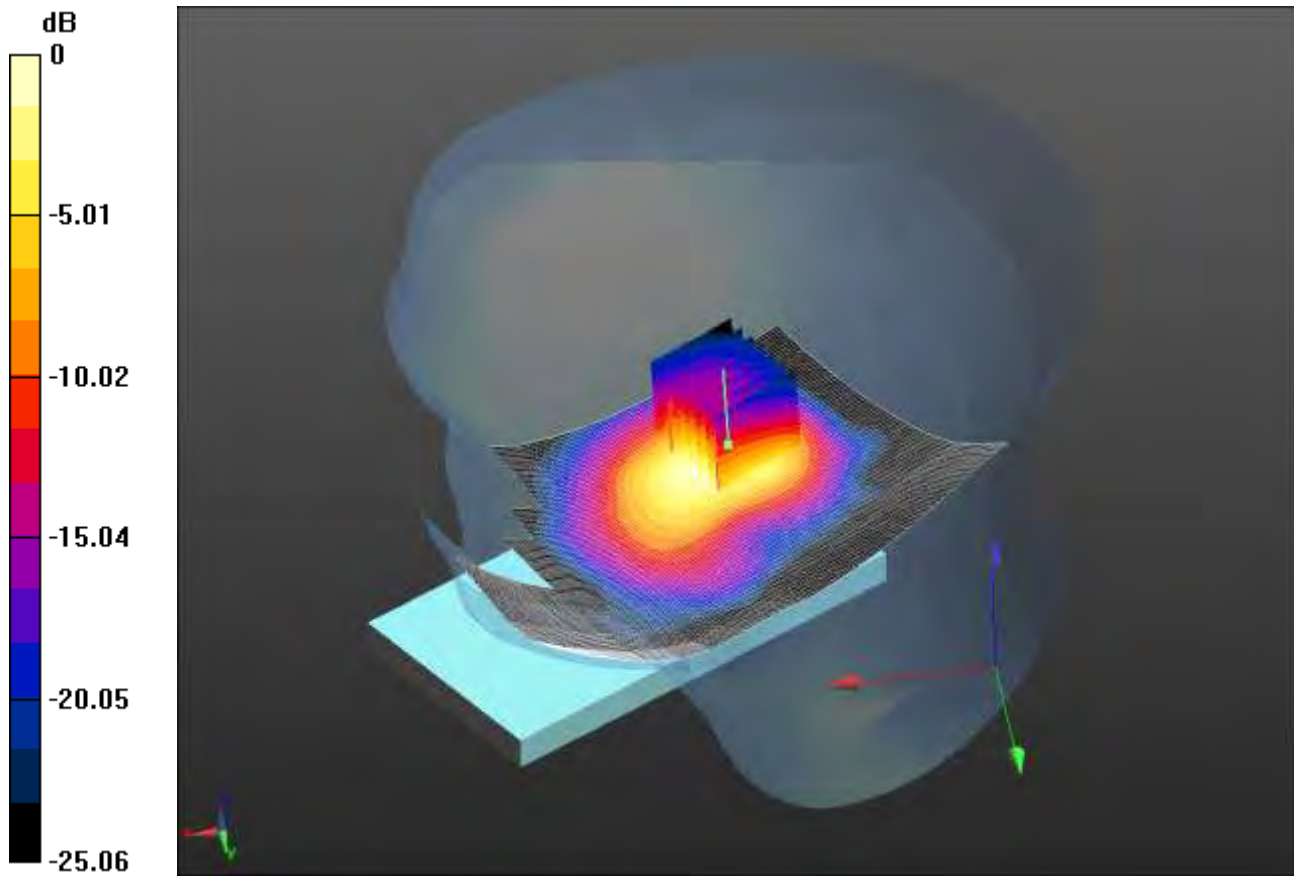
SAR(1 g) = 0.195 W/kg; SAR(10 g) = 0.104 W/kg

Maximum value of SAR (measured) = 0.264 W/kg

SCN/92490/079: Touch Right WiFi 802.11b 1Mbps CH6

Date: 02/04/2013

DUT: Sony Gaga Anna; Type: Gaga Anna; Serial: PM-0400-BV



0 dB = 0.828 W/kg = -0.82 dBW/kg

Communication System: WLAN 802.11; Frequency: 2437 MHz; Duty Cycle: 1:1

Medium: 2450 MHz HSL Medium parameters used (interpolated): $f = 2437$ MHz; $\sigma = 1.858$ mho/m; $\epsilon_r = 39.092$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3814; ConvF(6.89, 6.89, 6.89); Calibrated: 24/09/2012;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn450; Calibrated: 22/01/2013
- Phantom: SAM A (Site 58); Type: QD000P40Ca; Serial: TP:1193
- ; SEMCAD X Version 14.6.7 (6848)

Configuration/Touch Right - Middle/Area Scan (91x151x1): Interpolated grid: $dx=1.200$ mm, $dy=1.200$ mm

Maximum value of SAR (interpolated) = 0.979 W/kg

Configuration/Touch Right - Middle/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: $dx=5$ mm, $dy=5$ mm, $dz=5$ mm

Reference Value = 8.148 V/m; Power Drift = 0.10 dB

Peak SAR (extrapolated) = 1.09 W/kg

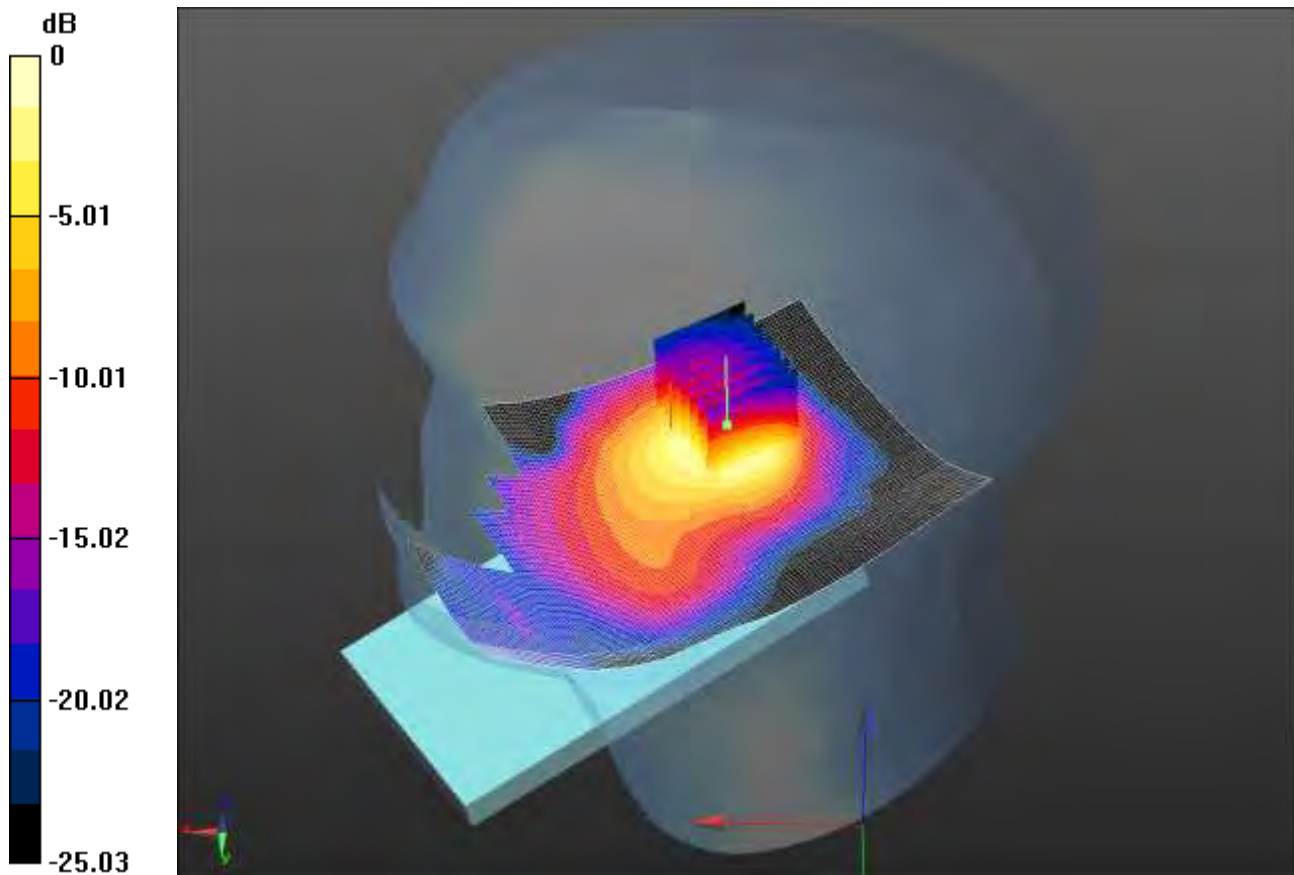
SAR(1 g) = 0.562 W/kg; SAR(10 g) = 0.273 W/kg

Maximum value of SAR (measured) = 0.828 W/kg

SCN/92490/080: Tilt Right WiFi 802.11b 1Mbps CH6

Date: 02/04/2013

DUT: Sony Gaga Anna; Type: Gaga Anna; Serial: PM-0400-BV



0 dB = 0.510 W/kg = -2.92 dBW/kg

Communication System: WLAN 802.11; Frequency: 2437 MHz; Duty Cycle: 1:1

Medium: 2450 MHz HSL Medium parameters used (interpolated): $f = 2437$ MHz; $\sigma = 1.858$ mho/m; $\epsilon_r = 39.092$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3814; ConvF(6.89, 6.89, 6.89); Calibrated: 24/09/2012;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn450; Calibrated: 22/01/2013
- Phantom: SAM A (Site 58); Type: QD000P40Ca; Serial: TP:1193
- ; SEMCAD X Version 14.6.7 (6848)

Configuration/Tilt Right - Middle/Area Scan (91x151x1): Interpolated grid: $dx=1.200$ mm, $dy=1.200$ mm

Maximum value of SAR (interpolated) = 0.616 W/kg

Configuration/Tilt Right - Middle/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: $dx=5$ mm, $dy=5$ mm, $dz=5$ mm

Reference Value = 6.998 V/m; Power Drift = 0.15 dB

Peak SAR (extrapolated) = 0.678 W/kg

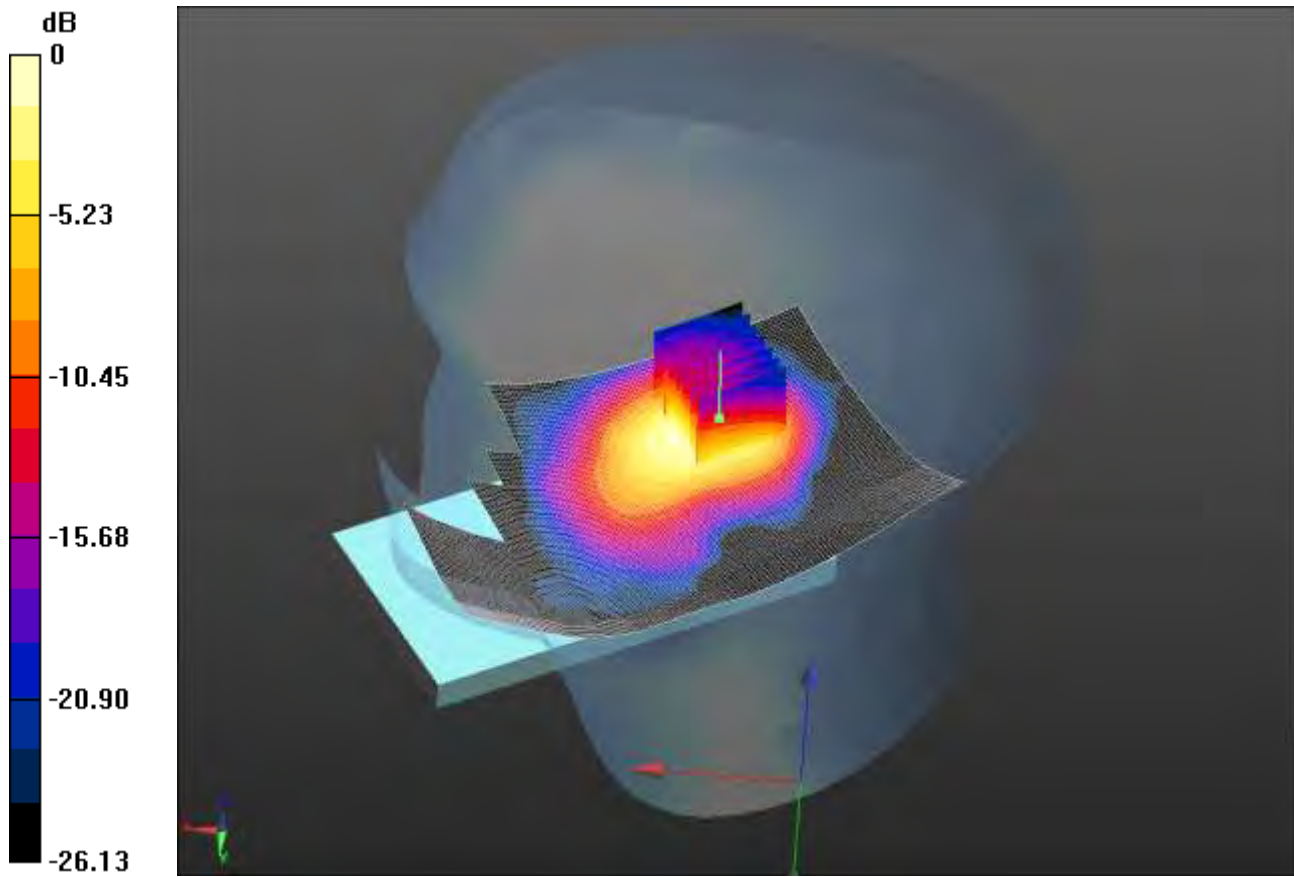
SAR(1 g) = 0.352 W/kg; SAR(10 g) = 0.174 W/kg

Maximum value of SAR (measured) = 0.510 W/kg

SCN/92490/081: Touch Right WiFi 802.11b 1Mbps CH1

Date: 02/04/2013

DUT: Sony Gaga Anna; Type: Gaga Anna; Serial: PM-0400-BV



0 dB = 0.718 W/kg = -1.44 dBW/kg

Communication System: WLAN 802.11; Frequency: 2412 MHz; Duty Cycle: 1:1

Medium: 2450 MHz HSL Medium parameters used (interpolated): $f = 2412$ MHz; $\sigma = 1.824$ mho/m; $\epsilon_r = 39.228$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3814; ConvF(6.89, 6.89, 6.89); Calibrated: 24/09/2012;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn450; Calibrated: 22/01/2013
- Phantom: SAM A (Site 58); Type: QD000P40Ca; Serial: TP:1193
- ; SEMCAD X Version 14.6.7 (6848)

Configuration/Touch Right - Low/Area Scan (91x151x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm

Maximum value of SAR (interpolated) = 0.829 W/kg

Configuration/Touch Right - Low/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 6.564 V/m; Power Drift = 0.17 dB

Peak SAR (extrapolated) = 0.941 W/kg

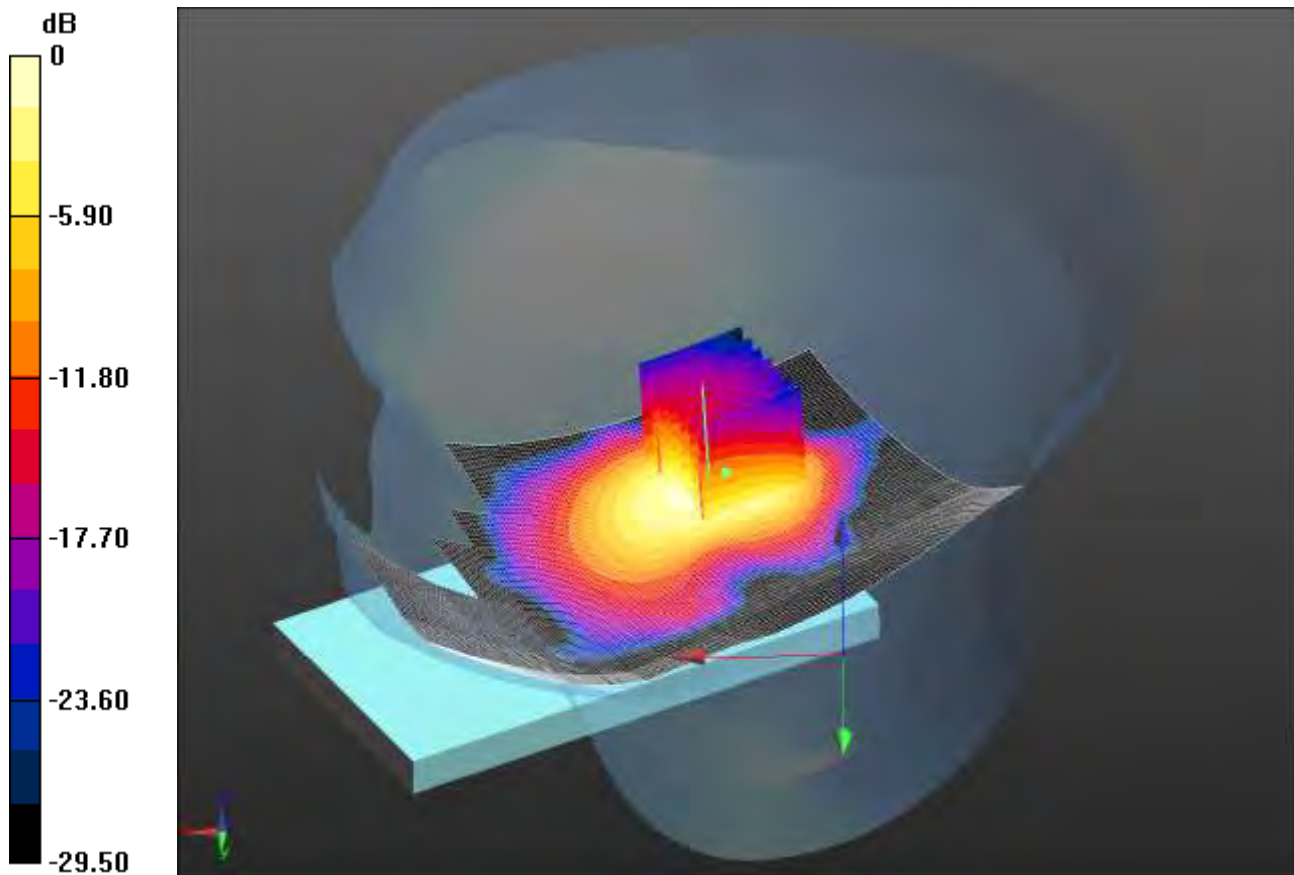
SAR(1 g) = 0.490 W/kg; SAR(10 g) = 0.238 W/kg

Maximum value of SAR (measured) = 0.718 W/kg

SCN/92490/082: Touch Right WiFi 802.11b 1Mbps CH11

Date: 02/04/2013

DUT: Sony Gaga Anna; Type: Gaga Anna; Serial: PM-0400-BV



0 dB = 0.666 W/kg = -1.77 dBW/kg

Communication System: WLAN 802.11; Frequency: 2462 MHz; Duty Cycle: 1:1

Medium: 2450 MHz HSL Medium parameters used (interpolated): $f = 2462$ MHz; $\sigma = 1.89$ mho/m; $\epsilon_r = 38.975$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3814; ConvF(6.89, 6.89, 6.89); Calibrated: 24/09/2012;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn450; Calibrated: 22/01/2013
- Phantom: SAM A (Site 58); Type: QD000P40Ca; Serial: TP:1193
- ; SEMCAD X Version 14.6.7 (6848)

Configuration/Touch Right - High/Area Scan (91x151x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm

Maximum value of SAR (interpolated) = 0.774 W/kg

Configuration/Touch Right - High/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 6.785 V/m; Power Drift = 0.17 dB

Peak SAR (extrapolated) = 0.891 W/kg

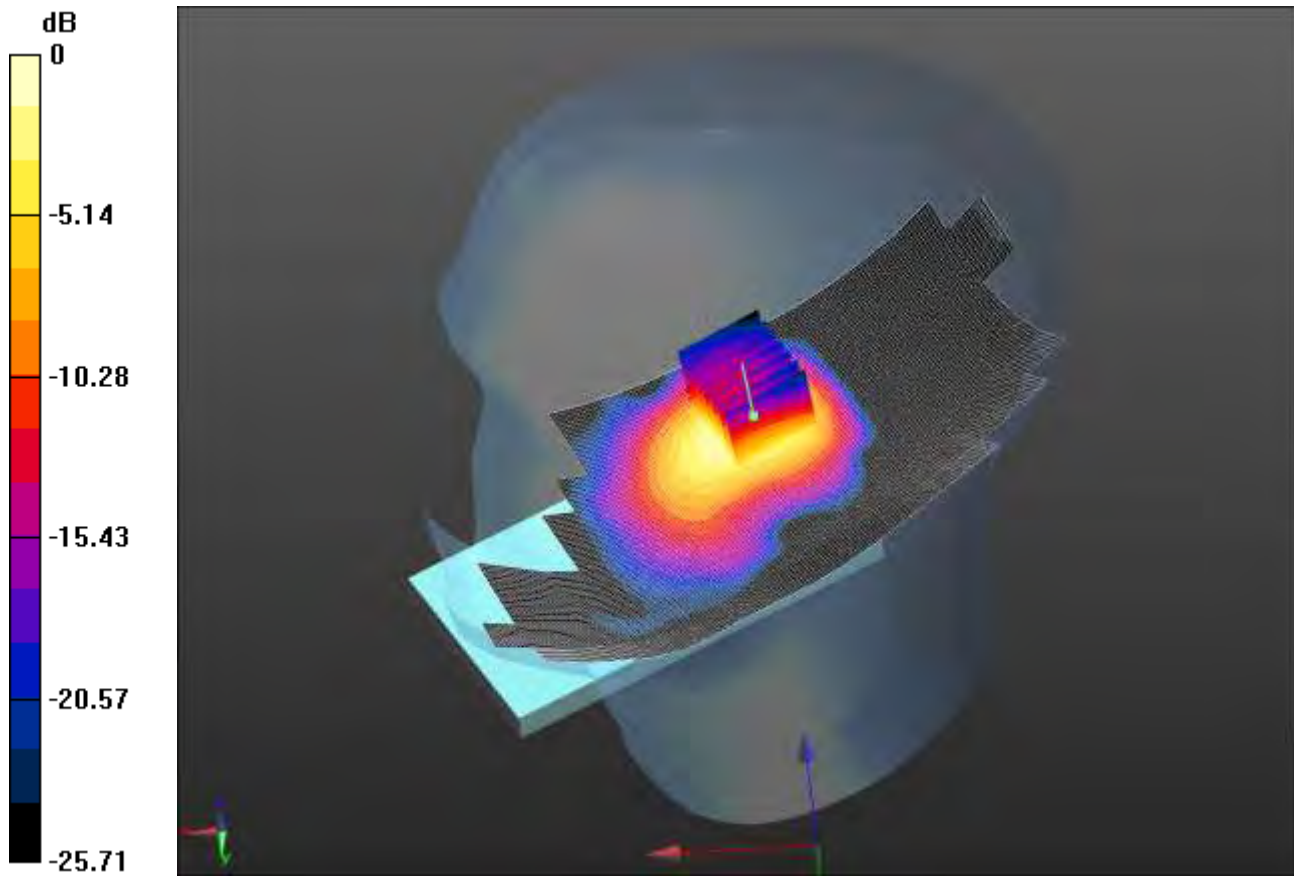
SAR(1 g) = 0.459 W/kg; SAR(10 g) = 0.222 W/kg

Maximum value of SAR (measured) = 0.666 W/kg

SCN/92490/083: Touch Right Antenna Extended WiFi 802.11b 1Mbps CH6

Date: 02/04/2013

DUT: Sony Gaga Anna; Type: Gaga Anna; Serial: PM-0400-BV



0 dB = 0.752 W/kg = -1.24 dBW/kg

Communication System: WLAN 802.11; Frequency: 2437 MHz; Duty Cycle: 1:1

Medium: 2450 MHz HSL Medium parameters used (interpolated): $f = 2437$ MHz; $\sigma = 1.858$ mho/m; $\epsilon_r = 39.092$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3814; ConvF(6.89, 6.89, 6.89); Calibrated: 24/09/2012;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn450; Calibrated: 22/01/2013
- Phantom: SAM A (Site 58); Type: QD000P40Ca; Serial: TP:1193
- ; SEMCAD X Version 14.6.7 (6848)

Configuration/Touch Right Antenna Extended - Middle/Area Scan (91x211x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm

Maximum value of SAR (interpolated) = 0.840 W/kg

Configuration/Touch Right Antenna Extended - Middle/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement

grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 7.300 V/m; Power Drift = 0.15 dB

Peak SAR (extrapolated) = 0.979 W/kg

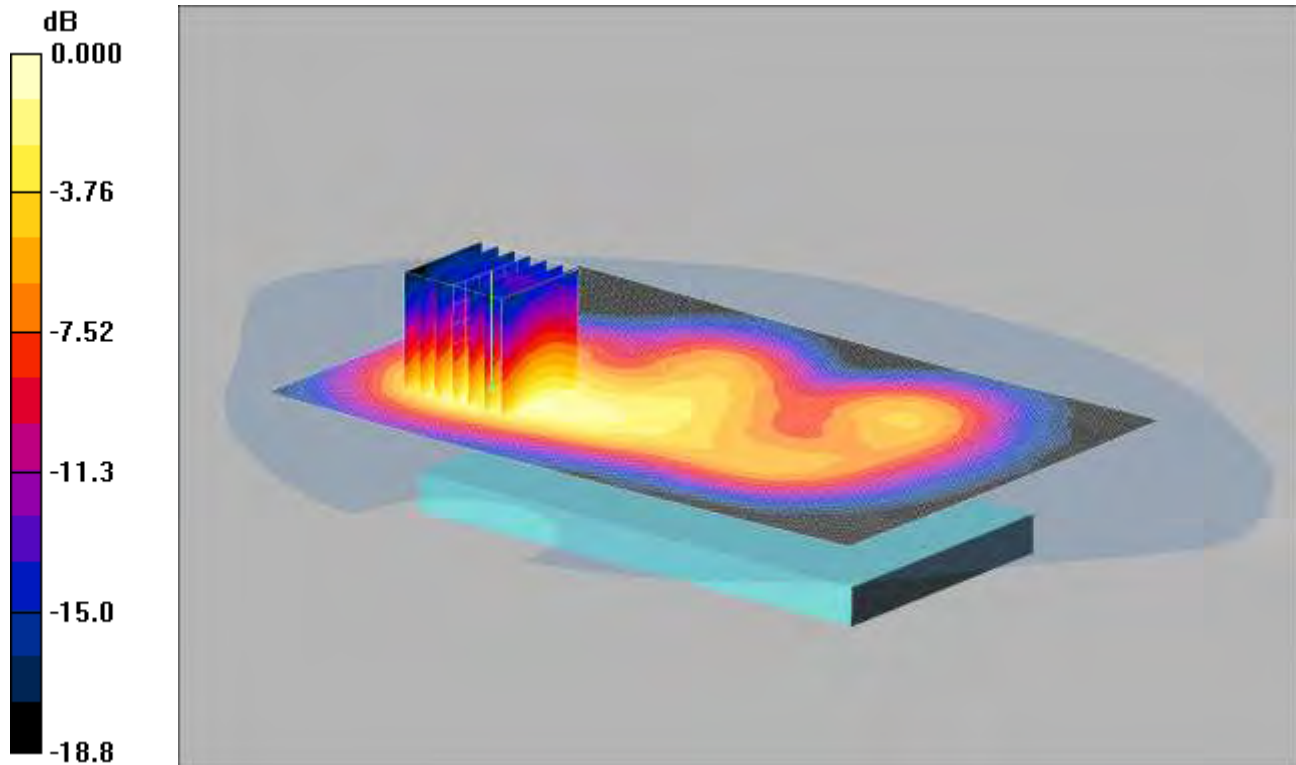
SAR(1 g) = 0.506 W/kg; SAR(10 g) = 0.244 W/kg

Maximum value of SAR (measured) = 0.752 W/kg

SCN/92490/084: Front of EUT Facing Phantom 802.11b 1Mbps CH6

Date: 08/05/2013

DUT: Sony Gaga Anna; Type: Gaga Anna; Serial: PM-0400-BV



0 dB = 0.140mW/g

Communication System: WLAN; Frequency: 2437 MHz; Duty Cycle: 1:1

Medium: 2450 MHz MSL Medium parameters used (interpolated): $f = 2437$ MHz; $\sigma = 2.02$ mho/m; $\epsilon_r = 51.5$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(4.13, 4.13, 4.13); Calibrated: 11/05/2012

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn431; Calibrated: 20/09/2012

- Phantom: SAM 12a (Site 56); Type: SAM 4.0; Serial: TP:1020

- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Front of EUT Facing Phantom - Middle 2/Area Scan (101x151x1): Measurement grid: dx=12mm, dy=12mm

Maximum value of SAR (interpolated) = 0.146 mW/g

Front of EUT Facing Phantom - Middle 2/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 5.47 V/m; Power Drift = -0.003 dB

Peak SAR (extrapolated) = 0.235 W/kg

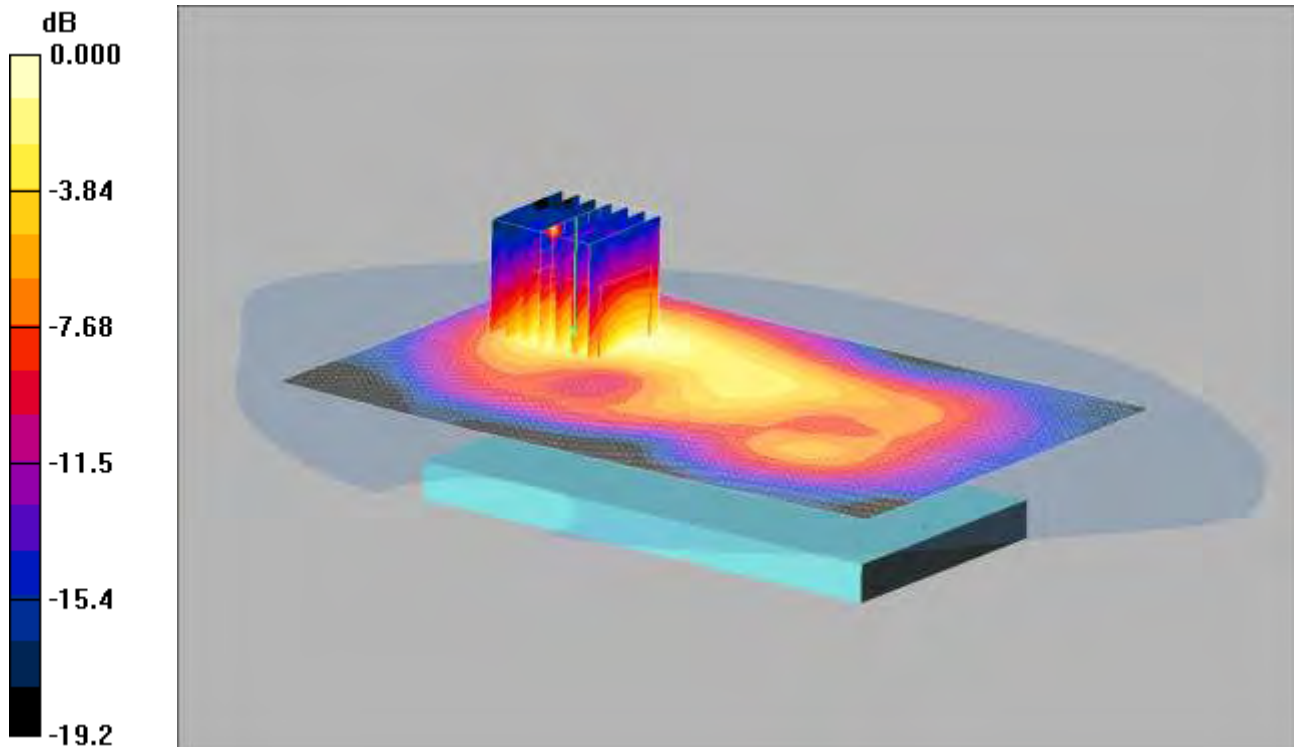
SAR(1 g) = 0.128 mW/g; SAR(10 g) = 0.071 mW/g

Maximum value of SAR (measured) = 0.140 mW/g

SCN/92490/085: Rear of EUT Facing Phantom 802.11b 1Mbps CH6

Date: 08/05/2013

DUT: Sony Gaga Anna; Type: Gaga Anna; Serial: PM-0400-BV



0 dB = 0.090mW/g

Communication System: WLAN; Frequency: 2437 MHz; Duty Cycle: 1:1

Medium: 2450 MHz MSL Medium parameters used (interpolated): $f = 2437$ MHz; $\sigma = 2.02$ mho/m; $\epsilon_r = 51.5$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(4.13, 4.13, 4.13); Calibrated: 11/05/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn431; Calibrated: 20/09/2012
- Phantom: SAM 12a (Site 56); Type: SAM 4.0; Serial: TP:1020
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Rear of EUT Facing Phantom - Middle 2/Area Scan (101x151x1):Measurement grid: $dx=12$ mm, $dy=12$ mm

Maximum value of SAR (interpolated) = 0.087 mW/g

Rear of EUT Facing Phantom - Middle 2/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: $dx=5$ mm, $dy=5$ mm, $dz=5$ mm

Reference Value = 4.35 V/m; Power Drift = -0.081 dBPeak SAR (extrapolated) = 0.308 W/kg

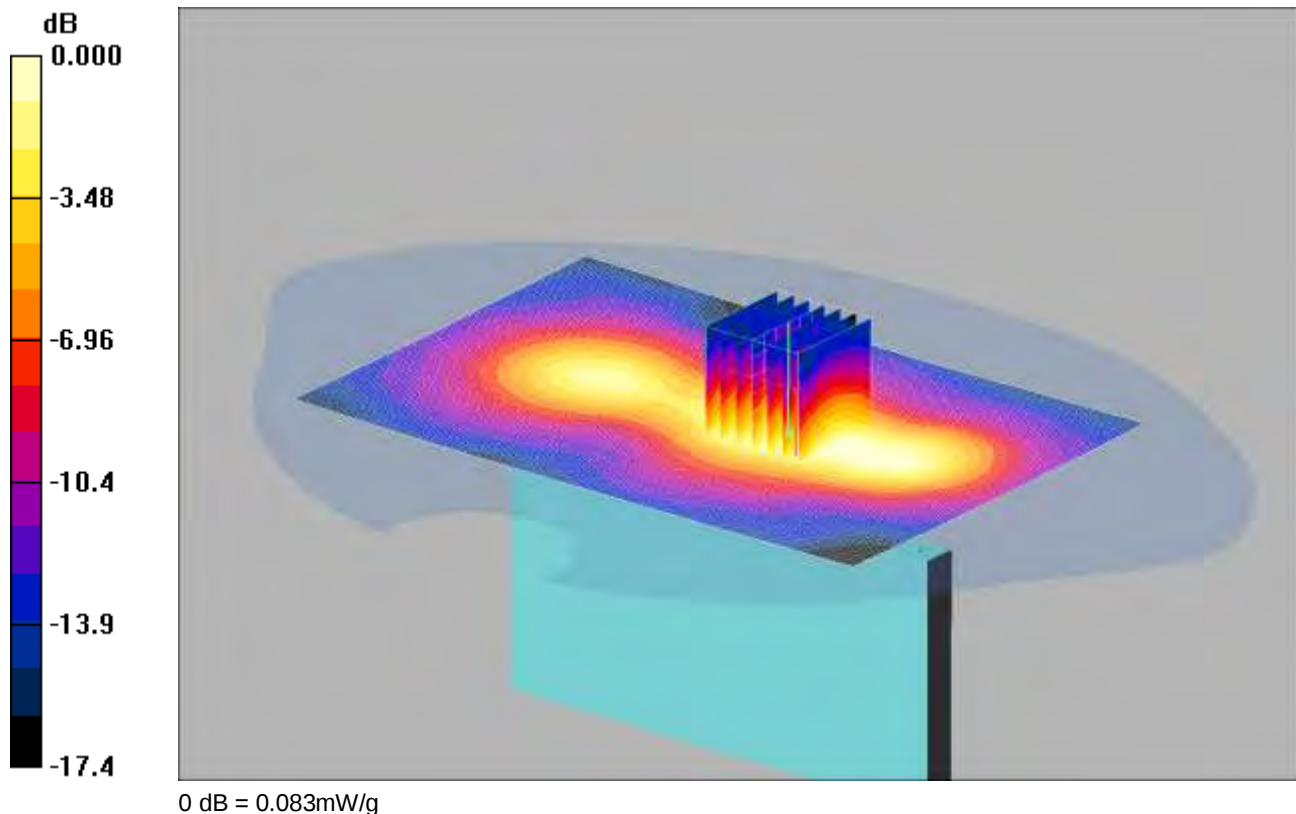
SAR(1 g) = 0.081 mW/g; SAR(10 g) = 0.038 mW/g

Maximum value of SAR (measured) = 0.090 mW/g

SCN/92490/086: Left Hand Side of EUT Facing Phantom 802.11b 1Mbps CH6

Date: 08/05/2013

DUT: Sony Gaga Anna; Type: Gaga Anna; Serial: PM-0400-BV



Communication System: WLAN; Frequency: 2437 MHz; Duty Cycle: 1:1

Medium: 2450 MHz MSL Medium parameters used (interpolated): $f = 2437$ MHz; $\sigma = 2.02$ mho/m; $\epsilon_r = 51.5$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(4.13, 4.13, 4.13); Calibrated: 11/05/2012

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn431; Calibrated: 20/09/2012

- Phantom: SAM 12a (Site 56); Type: SAM 4.0; Serial: TP:1020

- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Left Hand Side of EUT Facing Phantom - Middle 2/Area Scan (101x151x1): Measurement grid: dx=12mm, dy=12mm

Maximum value of SAR (interpolated) = 0.085 mW/g

Left Hand Side of EUT Facing Phantom - Middle 2/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 5.60 V/m; Power Drift = -0.013 dB

Peak SAR (extrapolated) = 0.153 W/kg

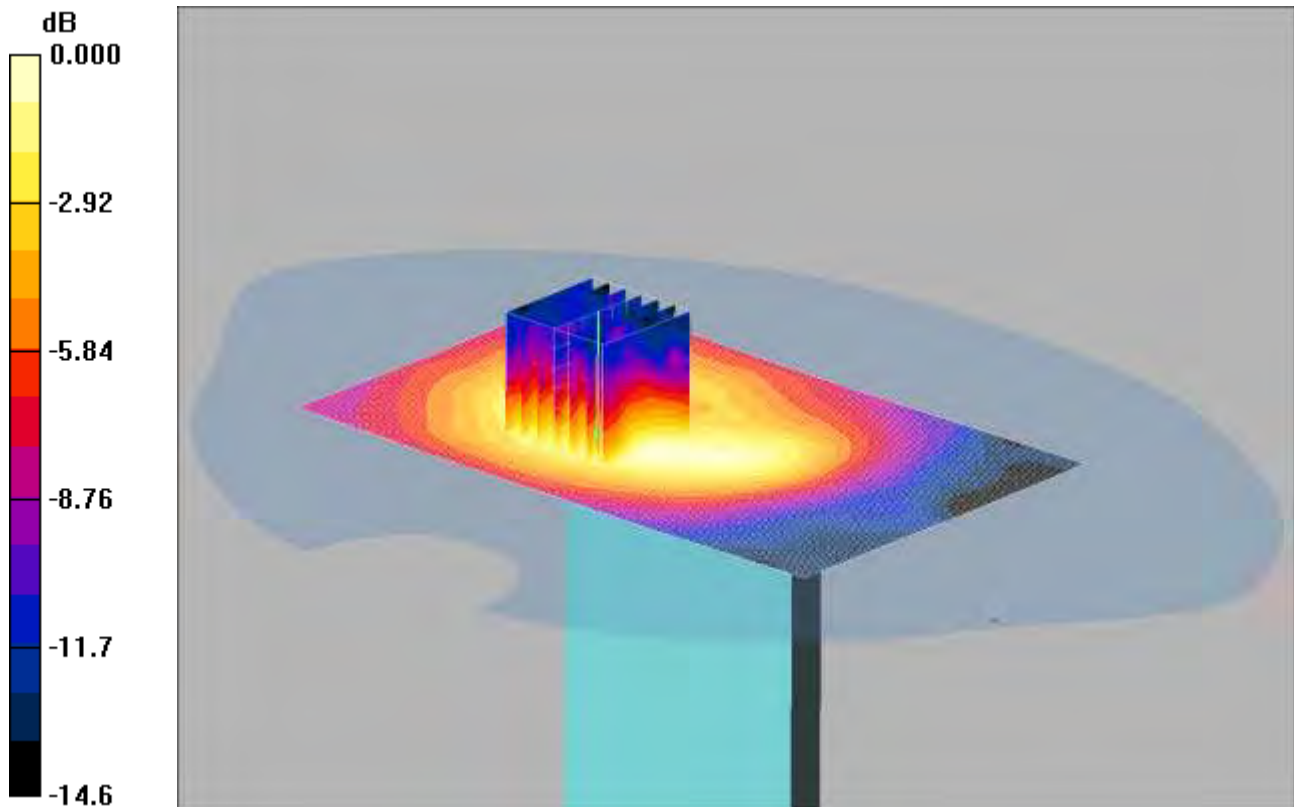
SAR(1 g) = 0.078 mW/g; SAR(10 g) = 0.043 mW/g

Maximum value of SAR (measured) = 0.083 mW/g

SCN/92490/087: Top of EUT Facing Phantom 802.11b 1Mbps CH6

Date: 08/05/2013

DUT: Sony Gaga Anna; Type: Gaga Anna; Serial: PM-0400-BV



0 dB = 0.028mW/g

Communication System: WLAN; Frequency: 2437 MHz; Duty Cycle: 1:1

Medium: 2450 MHz MSL Medium parameters used (interpolated): $f = 2437$ MHz; $\sigma = 2.02$ mho/m; $\epsilon_r = 51.5$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(4.13, 4.13, 4.13); Calibrated: 11/05/2012

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn431; Calibrated: 20/09/2012

- Phantom: SAM 12a (Site 56); Type: SAM 4.0; Serial: TP:1020

- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Top of EUT Facing Phantom - Middle/Area Scan (81x131x1): Measurement grid: dx=12mm, dy=12mm

Maximum value of SAR (interpolated) = 0.029 mW/g

Top of EUT Facing Phantom - Middle/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 3.23 V/m; Power Drift = -0.012 dB

Peak SAR (extrapolated) = 0.050 W/kg

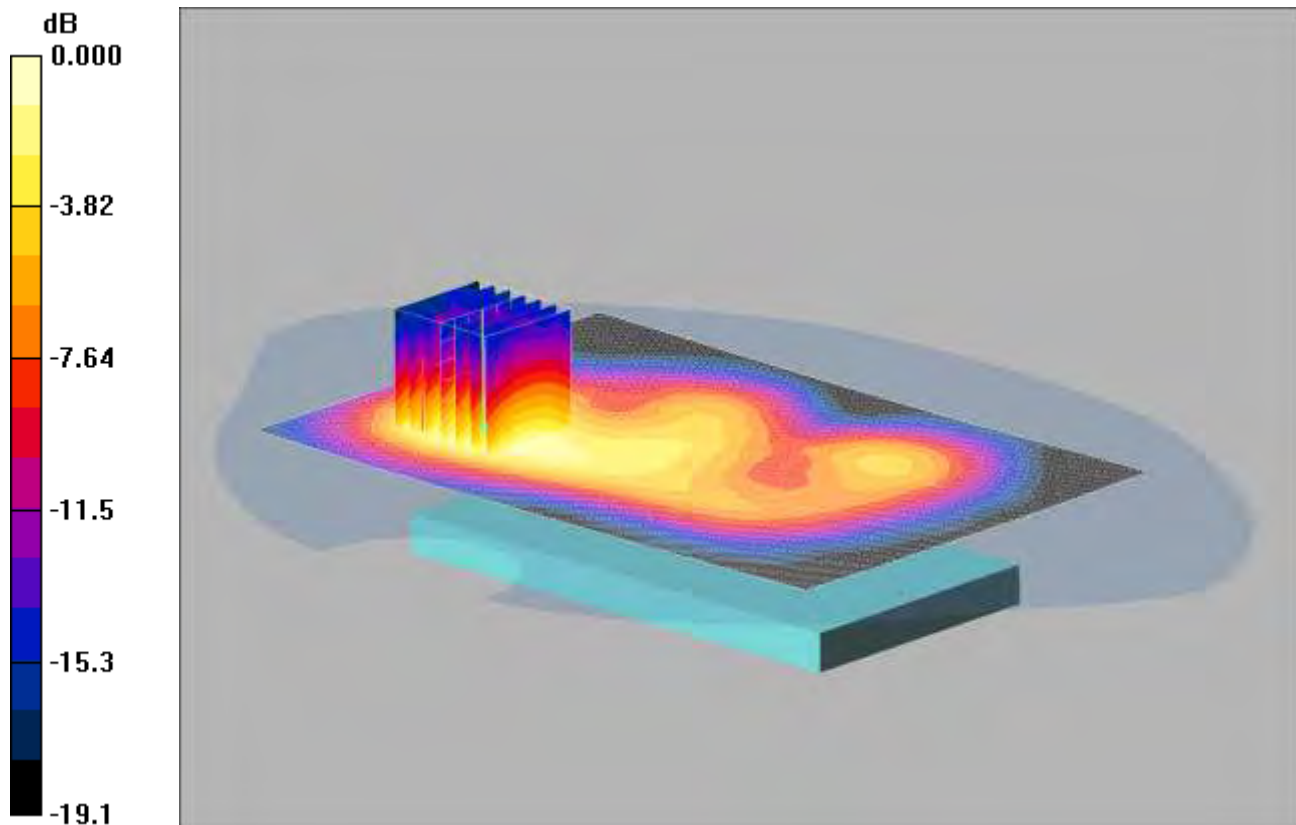
SAR(1 g) = 0.026 mW/g; SAR(10 g) = 0.015 mW/g

Maximum value of SAR (measured) = 0.028 mW/g

SCN/92490/088: Front of EUT Facing Phantom 802.11b 1Mbps CH1

Date: 08/05/2013

DUT: Sony Gaga Anna; Type: Gaga Anna; Serial: PM-0400-BV



0 dB = 0.162mW/g

Communication System: WLAN; Frequency: 2412 MHz; Duty Cycle: 1:1

Medium: 2450 MHz MSL Medium parameters used (interpolated): $f = 2412$ MHz; $\sigma = 1.99$ mho/m; $\epsilon_r = 51.6$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(4.13, 4.13, 4.13); Calibrated: 11/05/2012

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn431; Calibrated: 20/09/2012

- Phantom: SAM 12a (Site 56); Type: SAM 4.0; Serial: TP:1020

- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Front of EUT Facing Phantom - Low/Area Scan (101x151x1): Measurement grid: dx=12mm, dy=12mm

Maximum value of SAR (interpolated) = 0.170 mW/g

Front of EUT Facing Phantom - Low/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm,

dy=5mm, dz=5mm

Reference Value = 5.74 V/m; Power Drift = -0.059 dB

Peak SAR (extrapolated) = 0.274 W/kg

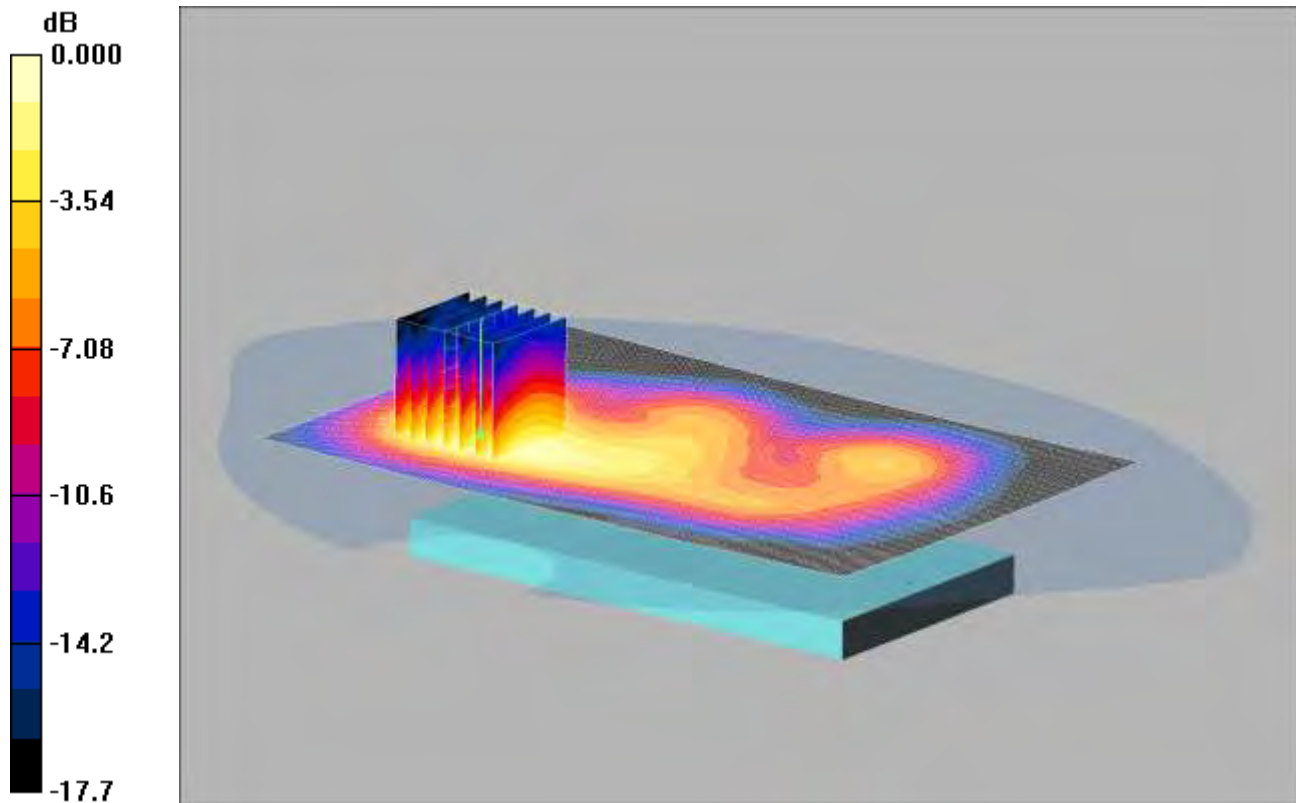
SAR(1 g) = 0.149 mW/g; SAR(10 g) = 0.082 mW/g

Maximum value of SAR (measured) = 0.162 mW/g

SCN/92490/089: Front of EUT Facing Phantom 802.11b 1Mbps CH11

Date: 08/05/2013

DUT: Sony Gaga Anna; Type: Gaga Anna; Serial: PM-0400-BV



0 dB = 0.137mW/g

Communication System: WLAN; Frequency: 2462 MHz; Duty Cycle: 1:1

Medium: 2450 MHz MSL Medium parameters used (interpolated): $f = 2462$ MHz; $\sigma = 2.05$ mho/m; $\epsilon_r = 51.5$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(4.13, 4.13, 4.13); Calibrated: 11/05/2012

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn431; Calibrated: 20/09/2012

- Phantom: SAM 12a (Site 56); Type: SAM 4.0; Serial: TP:1020

- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Front of EUT Facing Phantom - High/Area Scan (101x151x1): Measurement grid: dx=12mm, dy=12mm

Maximum value of SAR (interpolated) = 0.141 mW/g

Front of EUT Facing Phantom - High/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 5.20 V/m; Power Drift = -0.017 dB

Peak SAR (extrapolated) = 0.227 W/kg

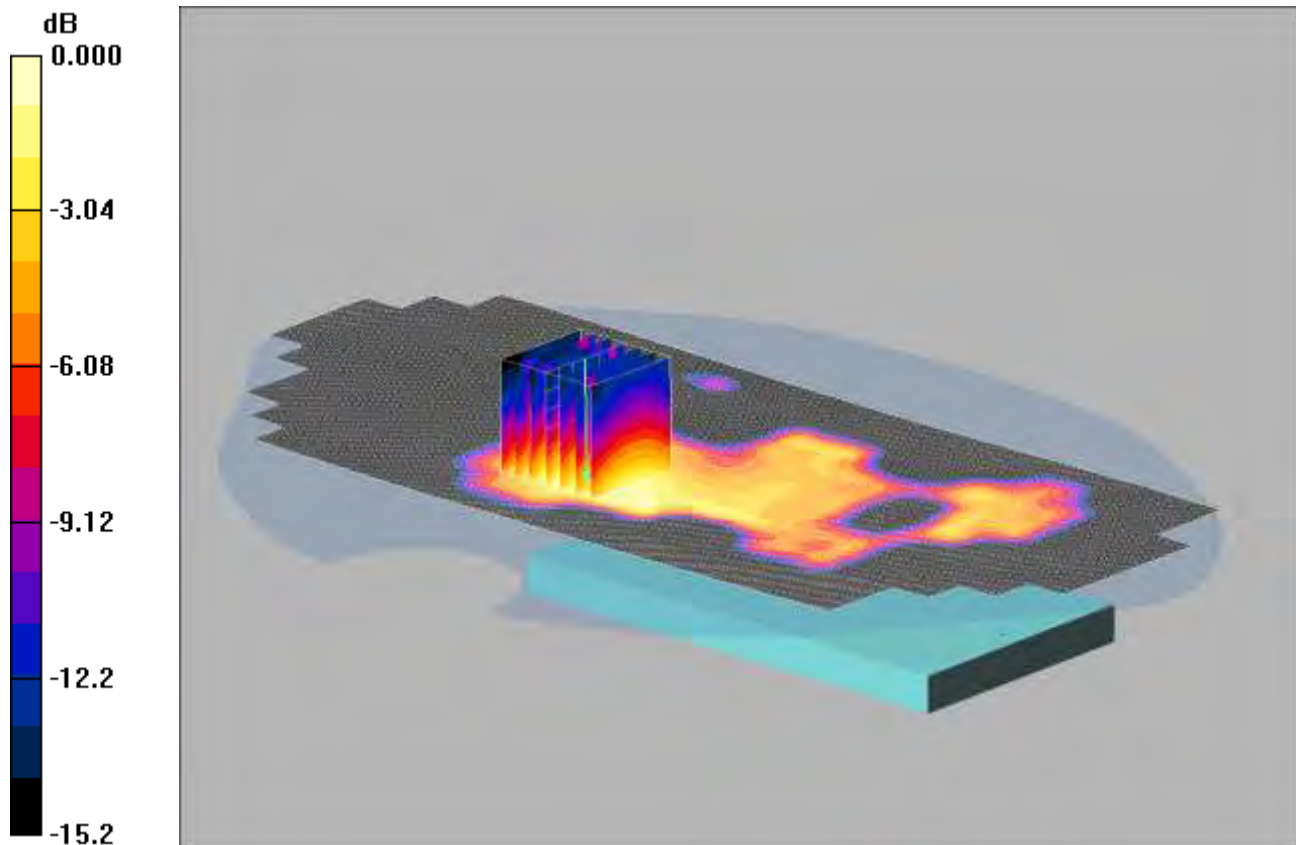
SAR(1 g) = 0.125 mW/g; SAR(10 g) = 0.069 mW/g

Maximum value of SAR (measured) = 0.137 mW/g

SCN/92490/090: Front of EUT Antenna Extended Facing Phantom 802.11b 1Mbps CH1

Date: 09/05/2013

DUT: Sony Gaga Anna; Type: Gaga Anna; Serial: PM-0400-BV



0 dB = 0.127mW/g

Communication System: WLAN; Frequency: 2412 MHz; Duty Cycle: 1:1

Medium: 2450 MHz MSL Medium parameters used (interpolated): $f = 2412$ MHz; $\sigma = 1.99$ mho/m; $\epsilon_r = 51.6$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(4.13, 4.13, 4.13); Calibrated: 11/05/2012

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn431; Calibrated: 20/09/2012

- Phantom: SAM 12a (Site 56); Type: SAM 4.0; Serial: TP:1020

- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Front of EUT Antenna Extended Facing Phantom - Low/Area Scan (101x231x1): Measurement grid: dx=12mm, dy=12mm

Maximum value of SAR (interpolated) = 0.125 mW/g

Front of EUT Antenna Extended Facing Phantom - Low/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement

grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 4.83 V/m; Power Drift = -0.100 dB

Peak SAR (extrapolated) = 0.211 W/kg

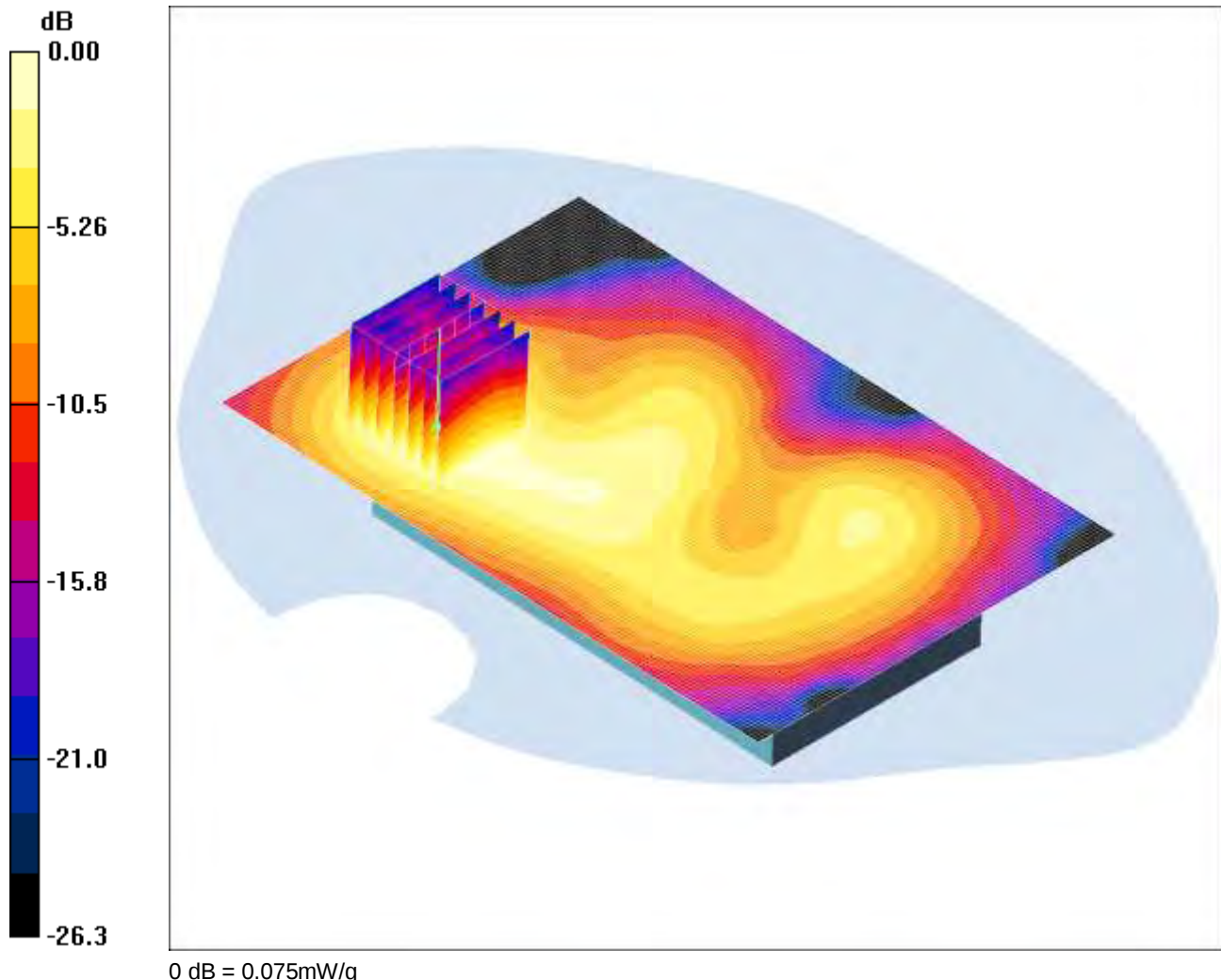
SAR(1 g) = 0.116 mW/g; SAR(10 g) = 0.062 mW/g

Maximum value of SAR (measured) = 0.127 mW/g

SCN/92490/091: Front of EUT Facing Phantom at 15mm Separation 802.11b 1Mbps CH6

Date: 04/04/2013

DUT: Sony Gaga Anna; Type: Gaga Anna; Serial: PM-0400-BV



Communication System: WLAN; Frequency: 2437 MHz; Duty Cycle: 1:1

Medium: 2450 MHz MSL Medium parameters used (interpolated): $f = 2437$ MHz; $\sigma = 2$ mho/m; $\epsilon_r = 50.6$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1528; ConvF(3.99, 3.99, 3.99); Calibrated: 26/07/2012

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn432; Calibrated: 02/05/2012

- Phantom: SAM 12b (Site 57); Type: SAM 4.0; Serial: TP:1031

- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 145

Front of EUT Facing Phantom - Middle/Area Scan (101x151x1): Measurement grid: dx=12mm, dy=12mm

Maximum value of SAR (interpolated) = 0.078 mW/g

Front of EUT Facing Phantom - Middle/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 4.54 V/m; Power Drift = -0.084 dB

Peak SAR (extrapolated) = 0.167 W/kg

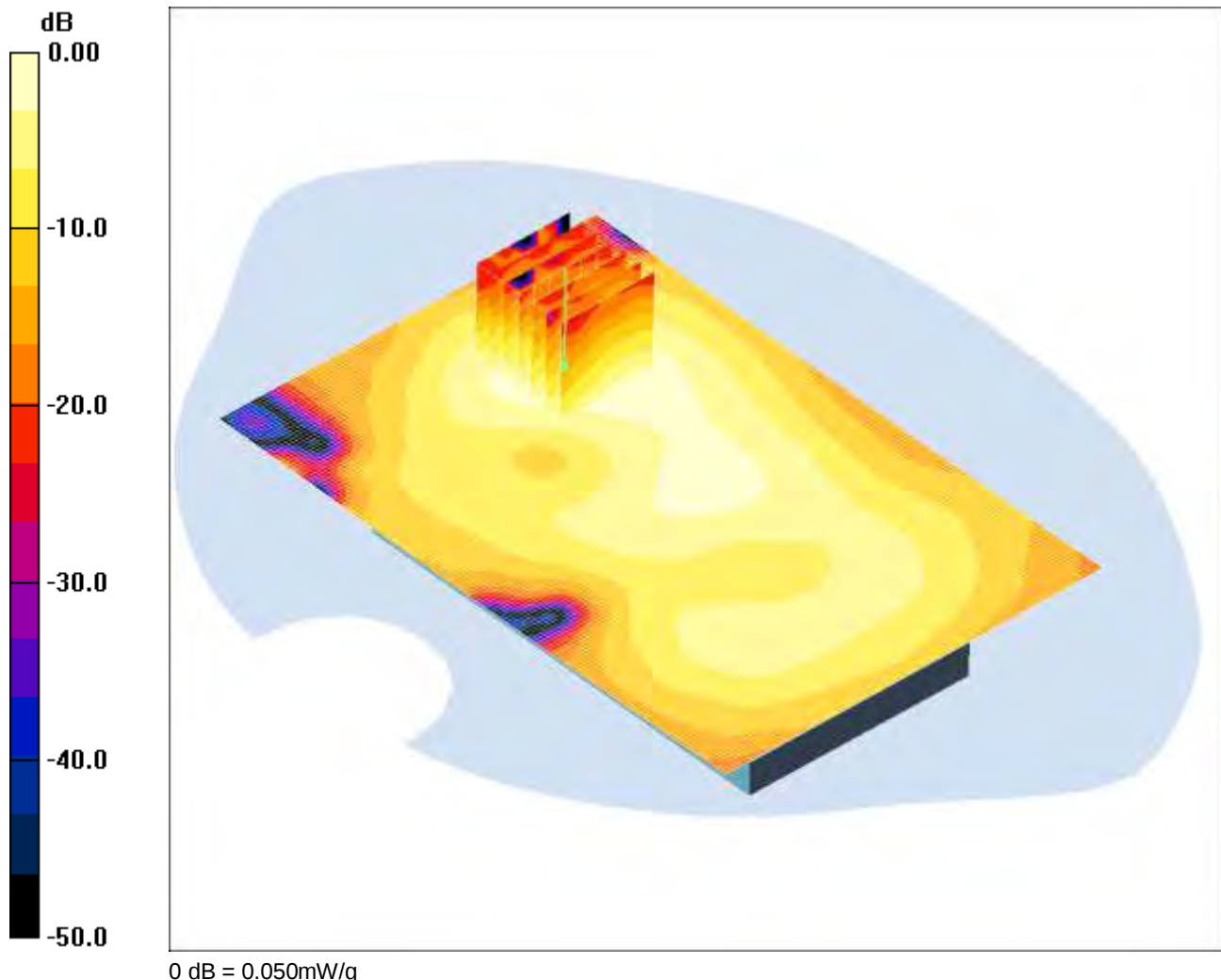
SAR(1 g) = 0.072 mW/g; SAR(10 g) = 0.038 mW/g

Maximum value of SAR (measured) = 0.075 mW/g

SCN/92490/092: Back of EUT Facing Phantom at 15mm Separation 802.11b 1Mbps CH6

Date: 04/04/2013

DUT: Sony Gaga Anna; Type: Gaga Anna; Serial: PM-0400-BV



Communication System: WLAN; Frequency: 2437 MHz; Duty Cycle: 1:1

Medium: 2450 MHz MSL Medium parameters used (interpolated): $f = 2437$ MHz; $\sigma = 2$ mho/m; $\epsilon_r = 50.6$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1528; ConvF(3.99, 3.99, 3.99); Calibrated: 26/07/2012

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn432; Calibrated: 02/05/2012

- Phantom: SAM 12b (Site 57); Type: SAM 4.0; Serial: TP:1031

- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 145

Back of EUT Facing Phantom - Middle/Area Scan (101x151x1): Measurement grid: dx=12mm, dy=12mm

Maximum value of SAR (interpolated) = 0.050 mW/g

Back of EUT Facing Phantom - Middle/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 3.55 V/m; Power Drift = -0.016 dB

Peak SAR (extrapolated) = 0.130 W/kg

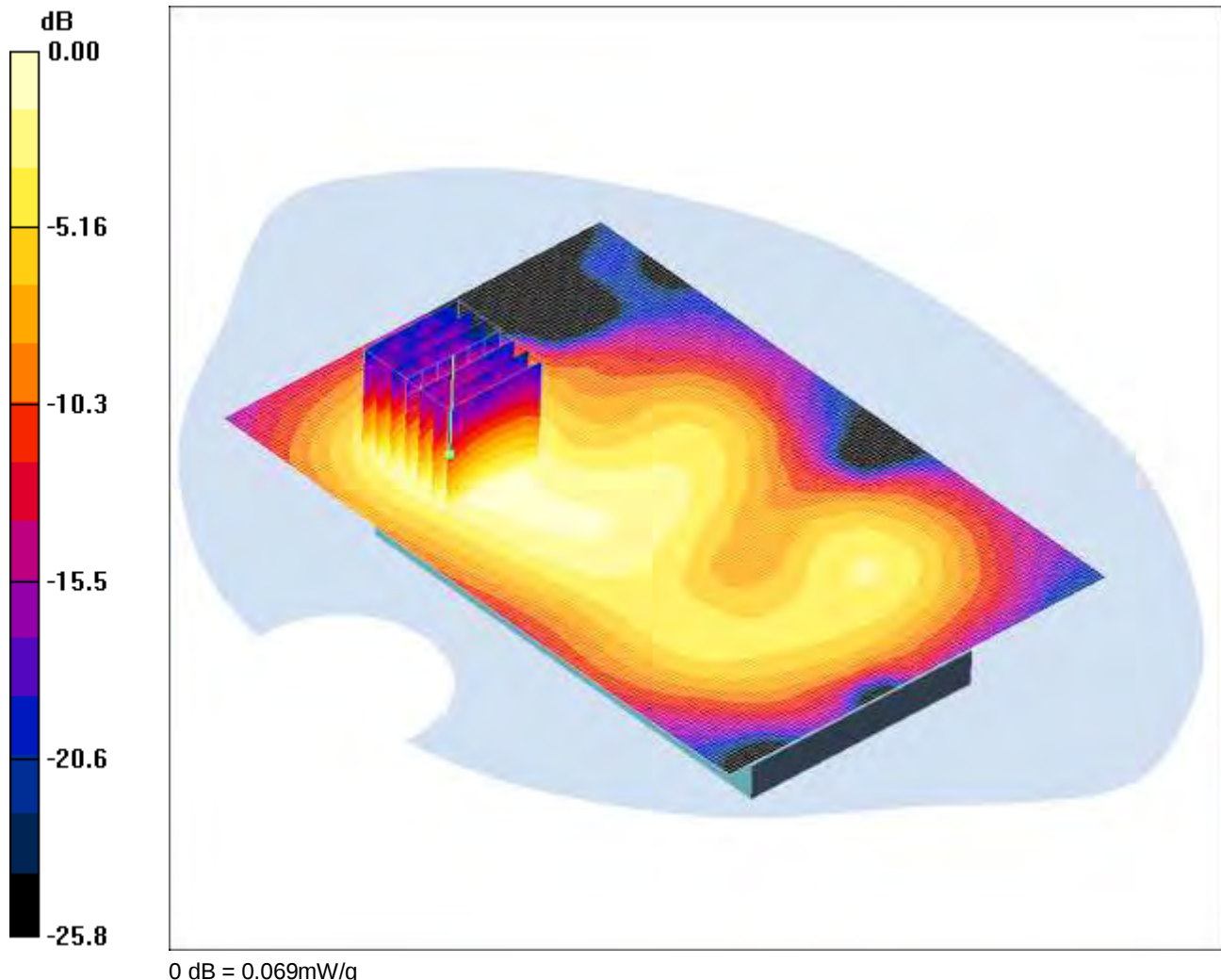
SAR(1 g) = 0.049 mW/g; SAR(10 g) = 0.024 mW/g

Maximum value of SAR (measured) = 0.050 mW/g

SCN/92490/093: Front of EUT Facing Phantom at 15mm Separation 802.11b 1Mbps CH1

Date: 04/04/2013

DUT: Sony Gaga Anna; Type: Gaga Anna; Serial: PM-0400-BV



Communication System: WLAN; Frequency: 2412 MHz; Duty Cycle: 1:1

Medium: 2450 MHz MSL Medium parameters used (interpolated): $f = 2412$ MHz; $\sigma = 1.97$ mho/m; $\epsilon_r = 50.7$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1528; ConvF(3.99, 3.99, 3.99); Calibrated: 26/07/2012

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn432; Calibrated: 02/05/2012

- Phantom: SAM 12b (Site 57); Type: SAM 4.0; Serial: TP:1031

- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 145

Front of EUT Facing Phantom - Low/Area Scan (101x151x1): Measurement grid: dx=12mm, dy=12mm

Maximum value of SAR (interpolated) = 0.069 mW/g

Front of EUT Facing Phantom - Low/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 4.44 V/m; Power Drift = -0.087 dB

Peak SAR (extrapolated) = 0.155 W/kg

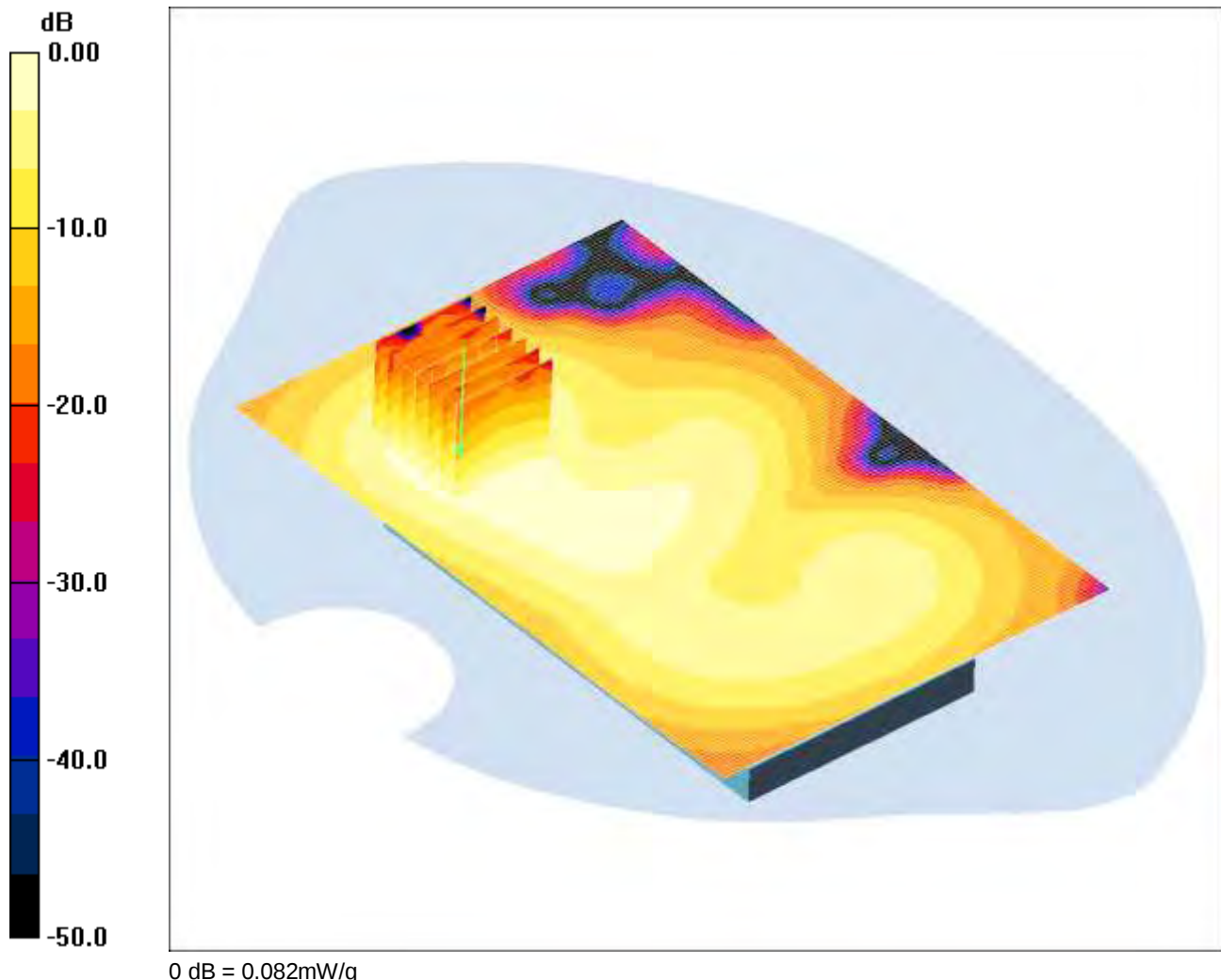
SAR(1 g) = 0.066 mW/g; SAR(10 g) = 0.035 mW/g

Maximum value of SAR (measured) = 0.069 mW/g

SCN/92490/094: Front of EUT Facing Phantom at 15mm Separation 802.11b 1Mbps CH11

Date: 04/04/2013

DUT: Sony Gaga Anna; Type: Gaga Anna; Serial: PM-0400-BV



0 dB = 0.082mW/g

Communication System: WLAN; Frequency: 2462 MHz; Duty Cycle: 1:1

Medium: 2450 MHz MSL Medium parameters used (interpolated): $f = 2462$ MHz; $\sigma = 2.03$ mho/m; $\epsilon_r = 50.5$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1528; ConvF(3.99, 3.99, 3.99); Calibrated: 26/07/2012

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn432; Calibrated: 02/05/2012

- Phantom: SAM 12b (Site 57); Type: SAM 4.0; Serial: TP:1031

- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 145

Front of EUT Facing Phantom - High/Area Scan (101x151x1): Measurement grid: dx=12mm, dy=12mm

Maximum value of SAR (interpolated) = 0.081 mW/g

Front of EUT Facing Phantom - High/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 4.54 V/m; Power Drift = 0.016 dB

Peak SAR (extrapolated) = 0.188 W/kg

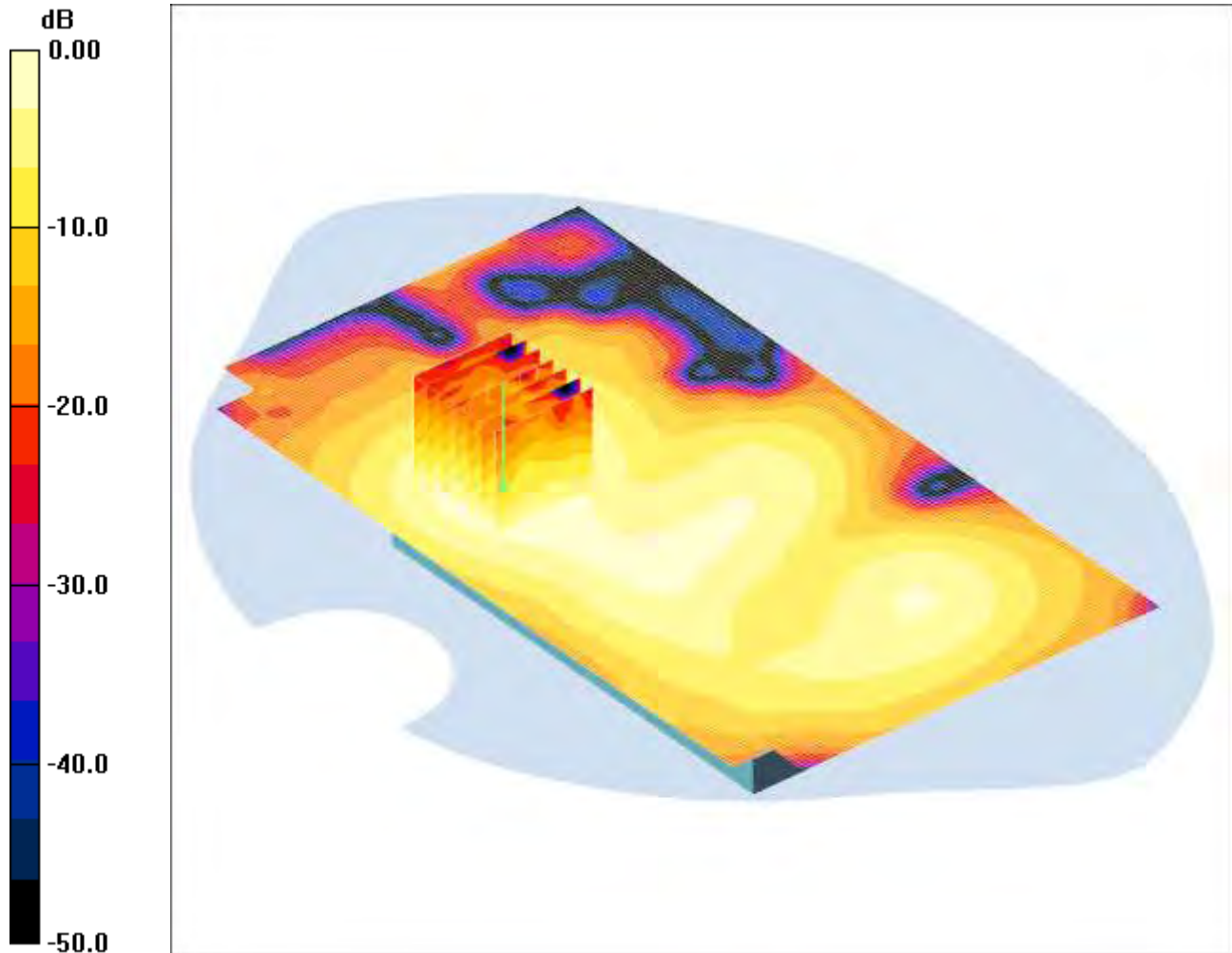
SAR(1 g) = 0.079 mW/g; SAR(10 g) = 0.042 mW/g

Maximum value of SAR (measured) = 0.082 mW/g

SCN/92490/095: Front of EUT Facing Phantom With Antenna Extended at 15mm Separation 802.11b 1Mbps
CH11

Date: 04/04/2013

DUT: Sony Gaga Anna; Type: Gaga Anna; Serial: PM-0400-BV



0 dB = 0.083mW/g

Communication System: WLAN; Frequency: 2462 MHz; Duty Cycle: 1:1

Medium: 2450 MHz MSL Medium parameters used (interpolated): $f = 2462$ MHz; $\sigma = 2.03$ mho/m; $\epsilon_r = 50.5$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1528; ConvF(3.99, 3.99, 3.99); Calibrated: 26/07/2012

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn432; Calibrated: 02/05/2012

- Phantom: SAM 12b (Site 57); Type: SAM 4.0; Serial: TP:1031

- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 145

Front of EUT Facing Phantom - High/Area Scan (101x181x1): Measurement grid: dx=12mm, dy=12mm

Maximum value of SAR (interpolated) = 0.080 mW/g

Front of EUT Facing Phantom - High/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 3.80 V/m; Power Drift = 0.043 dB

Peak SAR (extrapolated) = 0.187 W/kg

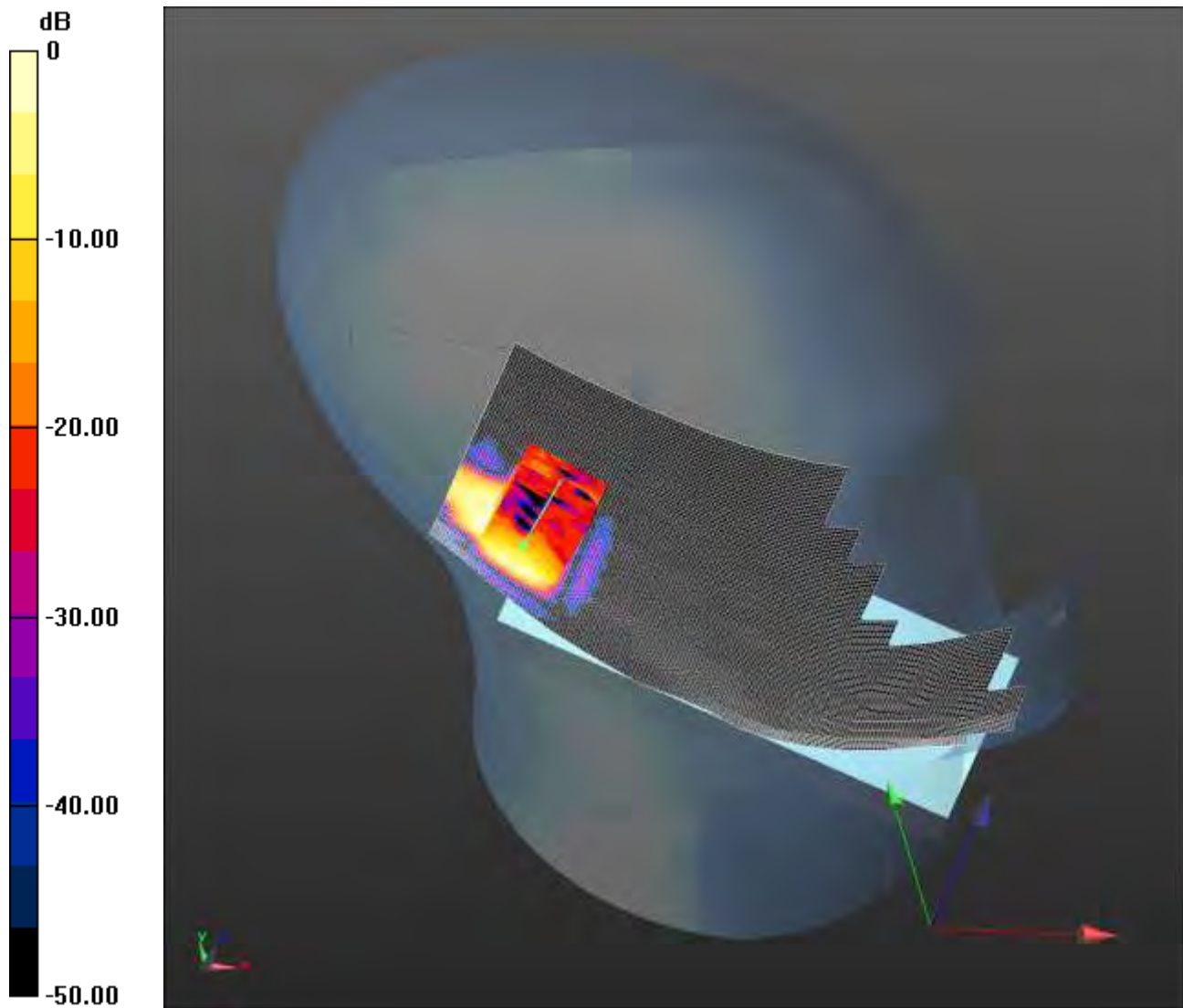
SAR(1 g) = 0.078 mW/g; SAR(10 g) = 0.040 mW/g

Maximum value of SAR (measured) = 0.083 mW/g

SCN/92490/096: Touch Left WiFi 802.11a 6Mbps CH48

Date: 25/03/2013

DUT: Sony Gaga Anna; Type: Gaga Anna; Serial: PM-0400-BV



0 dB = 0.457 W/kg = -3.40 dBW/kg

Communication System: WLAN 802.11; Frequency: 5240 MHz; Duty Cycle: 1:1

Medium: 5200/5500 MHz HSL Medium parameters used (interpolated): $f = 5240$ MHz; $\sigma = 4.719$ mho/m; $\epsilon_r = 35.904$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3814; ConvF(5.06, 5.06, 5.06); Calibrated: 24/09/2012;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn450; Calibrated: 22/01/2013
- Phantom: SAM B (Site 58); Type: Twin Phantom; Serial: TP:1020
- ; SEMCAD X Version 14.6.7 (6848)

Configuration/Touch Left- Middle/Area Scan (111x181x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.785 W/kg

Configuration/Touch Left- Middle/Zoom Scan (7x7x12) (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 8.677 V/m; Power Drift = 0.14 dB

Peak SAR (extrapolated) = 1.07 W/kg

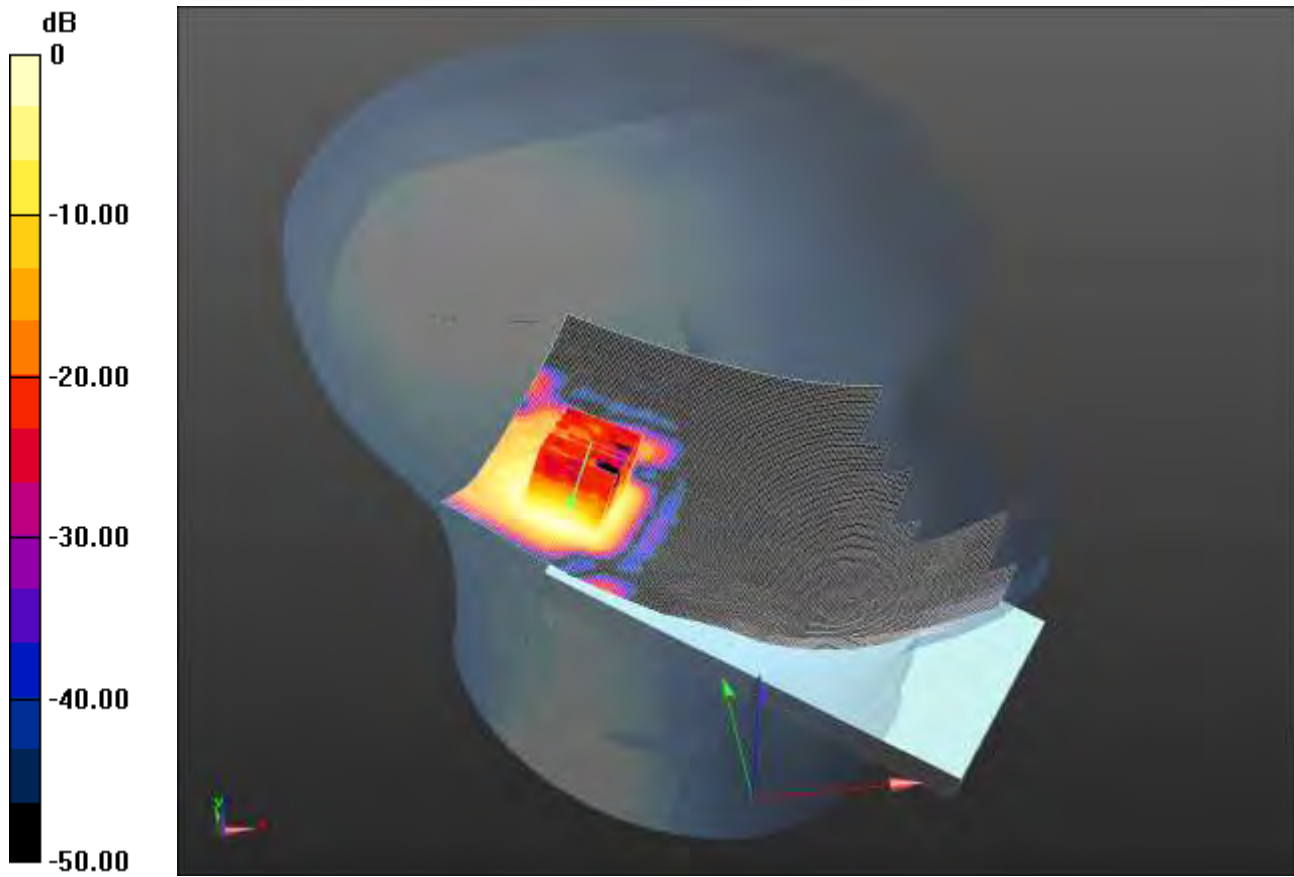
SAR(1 g) = 0.404 W/kg; SAR(10 g) = 0.147 W/kg

Maximum value of SAR (measured) = 0.457 W/kg

SCN/92490/097: Touch Left WiFi 802.11a 6Mbps CH48

Date: 25/03/2013

DUT: Sony Gaga Anna; Type: Gaga Anna; Serial: PM-0400-BV



0 dB = 0.469 W/kg = -3.29 dBW/kg

Communication System: WLAN 802.11; Frequency: 5240 MHz; Duty Cycle: 1:1

Medium: 5200/5500 MHz HSL Medium parameters used (interpolated): $f = 5240$ MHz; $\sigma = 4.719$ mho/m; $\epsilon_r = 35.904$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3814; ConvF(5.06, 5.06, 5.06); Calibrated: 24/09/2012;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn450; Calibrated: 22/01/2013
- Phantom: SAM B (Site 58); Type: Twin Phantom; Serial: TP:1020
- ; SEMCAD X Version 14.6.7 (6848)

Configuration/Tilt Left- Middle/Area Scan (111x181x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.547 W/kg

Configuration/Tilt Left- Middle/Zoom Scan (7x7x12) (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 7.665 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 1.10 W/kg

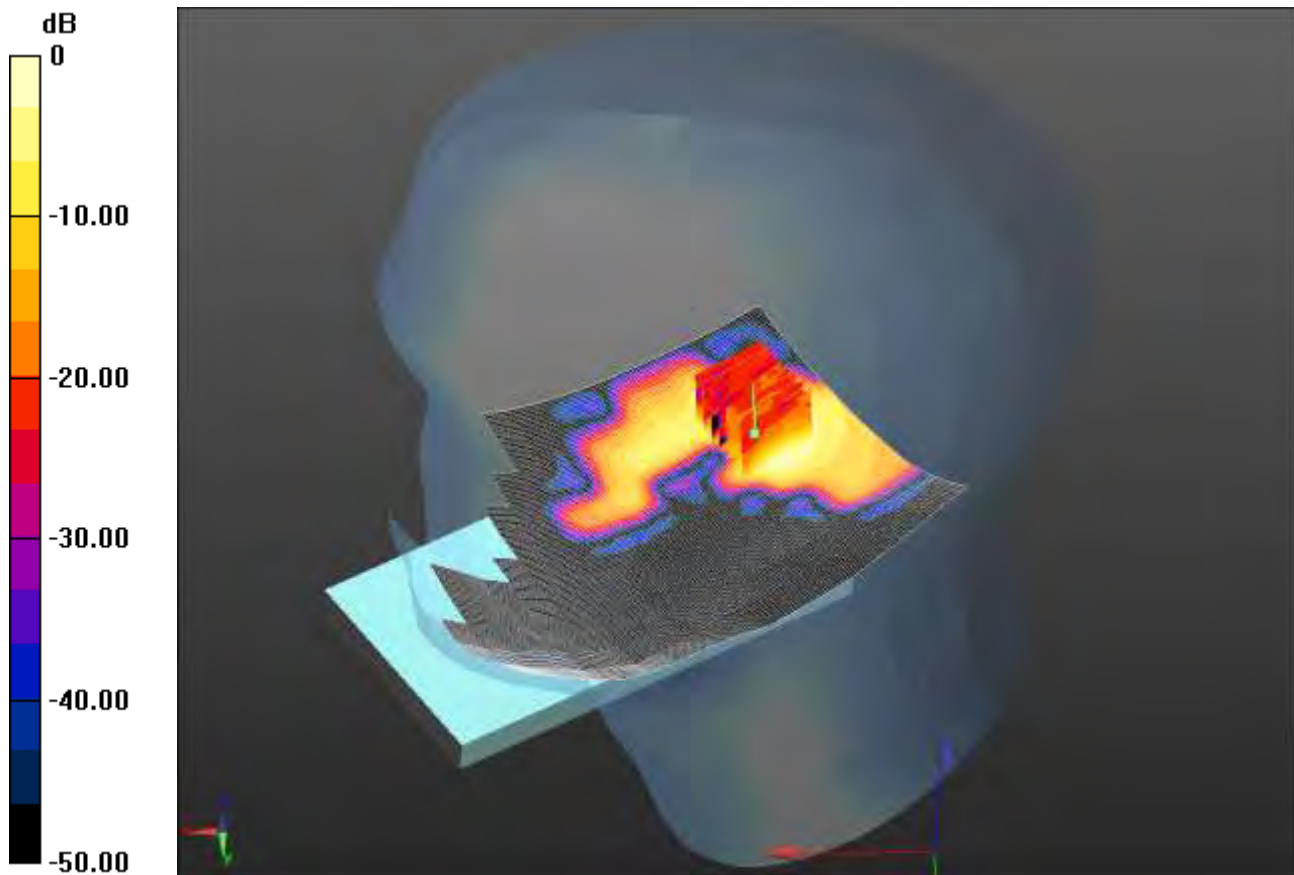
SAR(1 g) = 0.414 W/kg; SAR(10 g) = 0.156 W/kg

Maximum value of SAR (measured) = 0.469 W/kg

SCN/92490/098: Touch Right WiFi 802.11a 6Mbps CH48

Date: 25/03/2013

DUT: Sony Gaga Anna; Type: Gaga Anna; Serial: PM-0400-BV



0 dB = 0.524 W/kg = -2.81 dBW/kg

Communication System: WLAN 802.11; Frequency: 5240 MHz; Duty Cycle: 1:1

Medium: 5200/5500 MHz HSL Medium parameters used (interpolated): $f = 5240$ MHz; $\sigma = 4.719$ mho/m; $\epsilon_r = 35.904$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3814; ConvF(5.06, 5.06, 5.06); Calibrated: 24/09/2012;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn450; Calibrated: 22/01/2013
- Phantom: SAM B (Site 58); Type: Twin Phantom; Serial: TP:1020
- ; SEMCAD X Version 14.6.7 (6848)

Configuration/Touch Right - Middle/Area Scan (111x181x1): Interpolated grid: $dx=1.000$ mm, $dy=1.000$ mm

Maximum value of SAR (interpolated) = 0.696 W/kg

Configuration/Touch Right - Middle/Zoom Scan (7x7x12) (7x7x12)/Cube 0: Measurement grid: $dx=4$ mm, $dy=4$ mm, $dz=2$ mm

Reference Value = 9.564 V/m; Power Drift = 0.11 dB

Peak SAR (extrapolated) = 1.31 W/kg

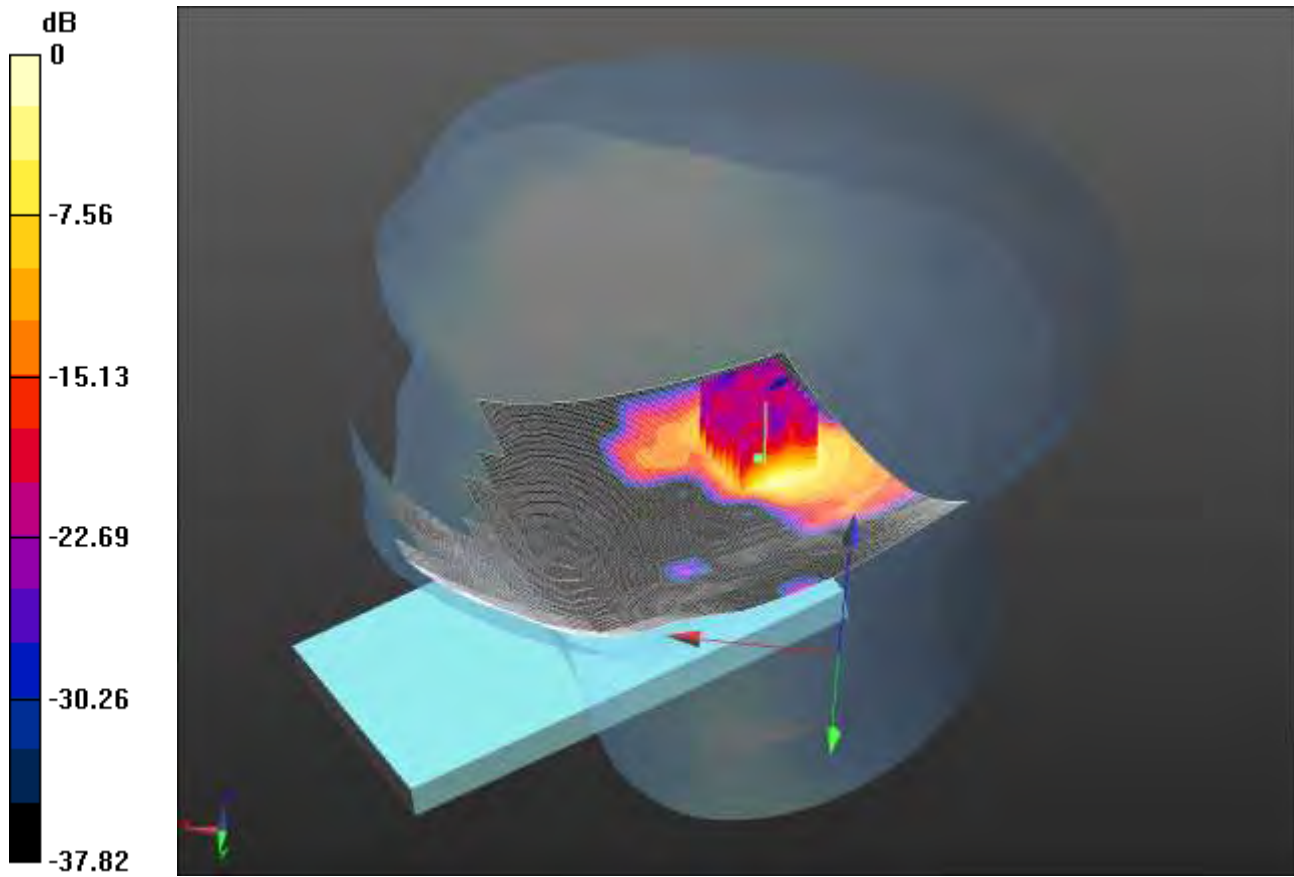
SAR(1 g) = 0.437 W/kg; SAR(10 g) = 0.142 W/kg

Maximum value of SAR (measured) = 0.524 W/kg

SCN/92490/099: Tilt Right WiFi 802.11a 6Mbps CH48

Date: 25/03/2013

DUT: Sony Gaga Anna; Type: Gaga Anna; Serial: PM-0400-BV



0 dB = 0.590 W/kg = -2.29 dBW/kg

Communication System: WLAN 802.11; Frequency: 5240 MHz; Duty Cycle: 1:1

Medium: 5200/5500 MHz HSL Medium parameters used (interpolated): $f = 5240$ MHz; $\sigma = 4.719$ mho/m; $\epsilon_r = 35.904$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3814; ConvF(5.06, 5.06, 5.06); Calibrated: 24/09/2012;

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn450; Calibrated: 22/01/2013

- Phantom: SAM B (Site 58); Type: Twin Phantom; Serial: TP:1020

- ; SEMCAD X Version 14.6.7 (6848)

Configuration/Tilt Right - Middle/Area Scan (111x181x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.698 W/kg

Configuration/Tilt Right - Middle/Zoom Scan (7x7x12) (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 9.664 V/m; Power Drift = 0.10 dB

Peak SAR (extrapolated) = 1.48 W/kg

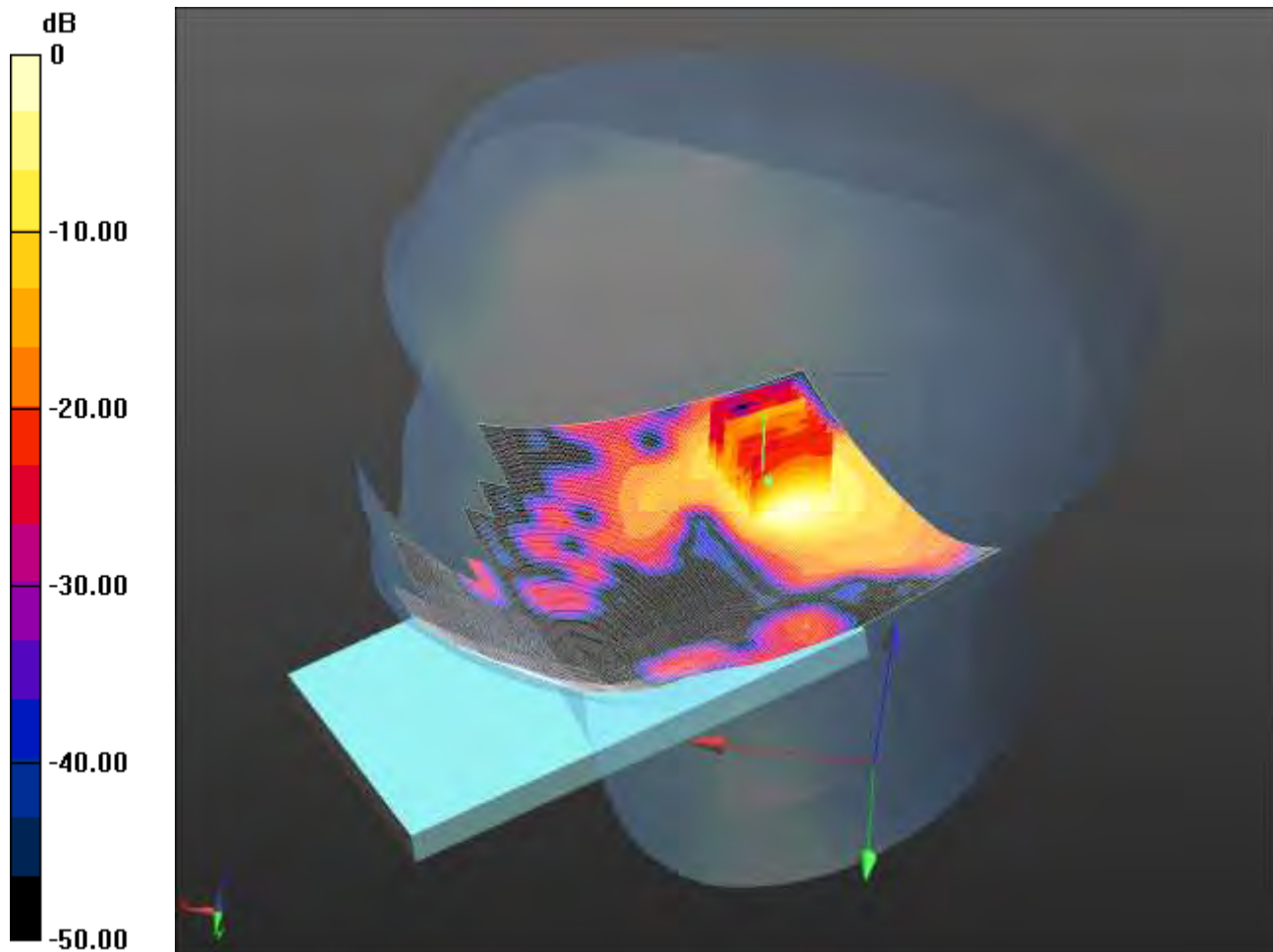
SAR(1 g) = 0.495 W/kg; SAR(10 g) = 0.175 W/kg

Maximum value of SAR (measured) = 0.590 W/kg

SCN/92490/100: Tilt Right WiFi 802.11a 6Mbps CH52

Date: 25/03/2013

DUT: Sony Gaga Anna; Type: Gaga Anna; Serial: PM-0400-BV



0 dB = 1.02 W/kg = 0.09 dBW/kg

Communication System: WLAN 802.11; Frequency: 5260 MHz; Duty Cycle: 1:1

Medium: 5200/5500 MHz HSL Medium parameters used (interpolated): $f = 5260$ MHz; $\sigma = 4.743$ mho/m; $\epsilon_r = 35.847$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3814; ConvF(4.73, 4.73, 4.73); Calibrated: 24/09/2012;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn450; Calibrated: 22/01/2013
- Phantom: SAM B (Site 58); Type: Twin Phantom; Serial: TP:1020
- ; SEMCAD X Version 14.6.7 (6848)

Configuration/Tilt Right - Middle 2/Area Scan (111x181x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 1.19 W/kg

Configuration/Tilt Right - Middle 2/Zoom Scan (7x7x12) (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 12.509 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 1.74 W/kg

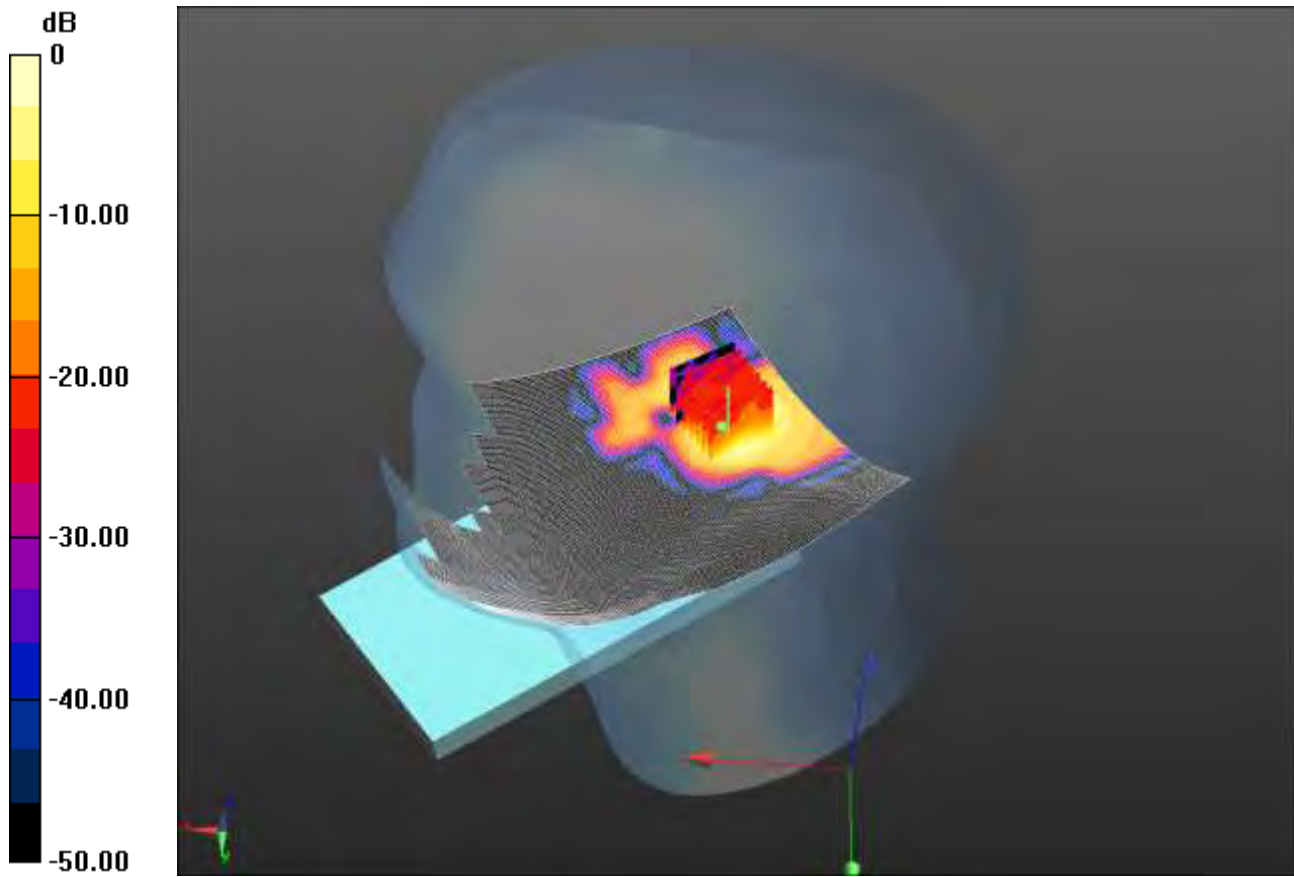
SAR(1 g) = 0.514 W/kg; SAR(10 g) = 0.179 W/kg

Maximum value of SAR (measured) = 1.02 W/kg

SCN/92490/101: Tilt Right WiFi 802.11a 6Mbps CH116

Date: 25/03/2013

DUT: Sony Gaga Anna; Type: Gaga Anna; Serial: PM-0400-BV



0 dB = 0.936 W/kg = -0.29 dBW/kg

Communication System: WLAN 802.11; Frequency: 5580 MHz; Duty Cycle: 1:1

Medium: 5200/5500 MHz HSL Medium parameters used (interpolated): $f = 5580$ MHz; $\sigma = 5.032$ mho/m; $\epsilon_r = 35.322$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3814; ConvF(4.26, 4.26, 4.26); Calibrated: 24/09/2012;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn450; Calibrated: 22/01/2013
- Phantom: SAM B (Site 58); Type: Twin Phantom; Serial: TP:1020
- ; SEMCAD X Version 14.6.7 (6848)

Configuration/Tilt Right - Middle/Area Scan (111x181x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 1.06 W/kg

Configuration/Tilt Right - Middle/Zoom Scan (7x7x12) (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 11.984 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 1.84 W/kg

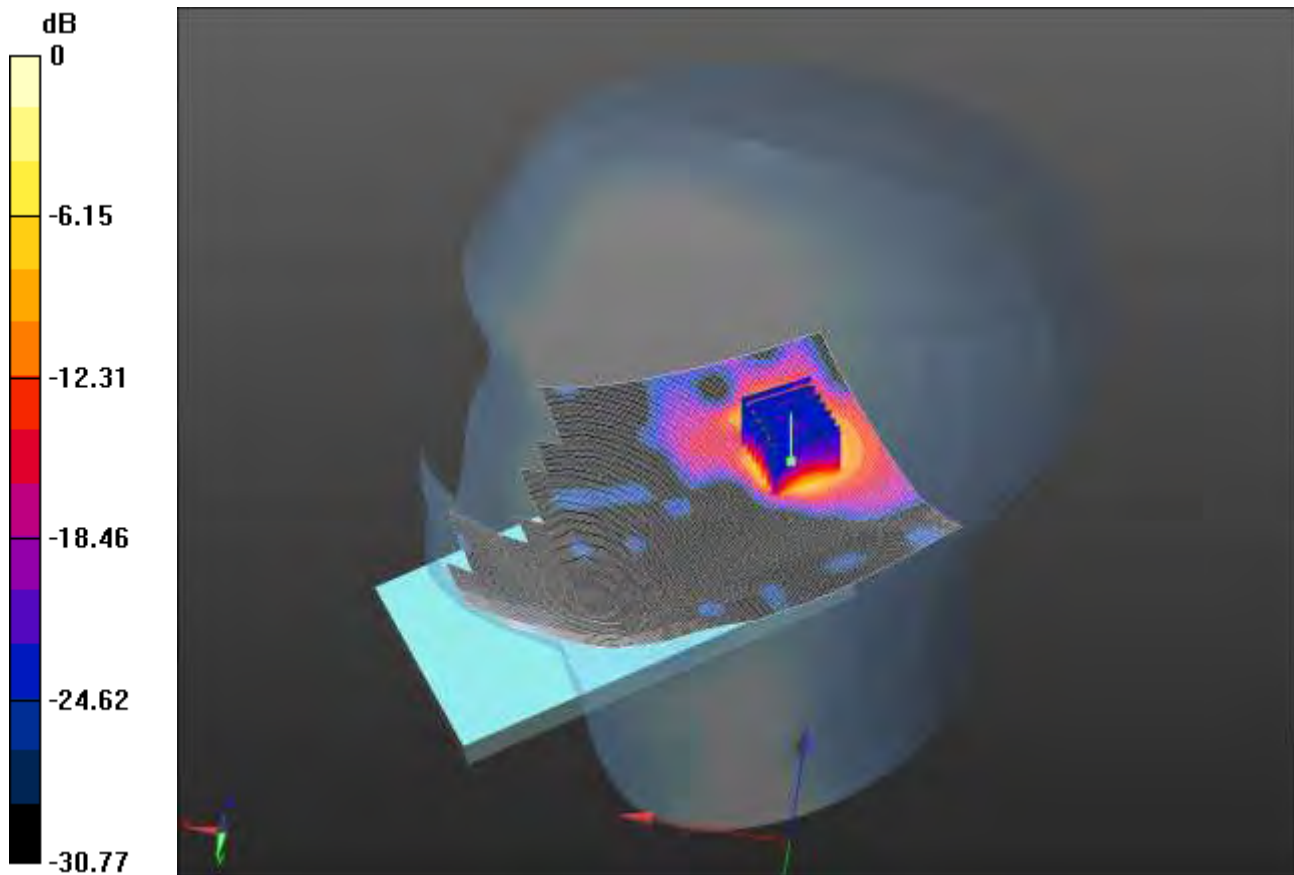
SAR(1 g) = 0.463 W/kg; SAR(10 g) = 0.138 W/kg

Maximum value of SAR (measured) = 0.936 W/kg

SCN/92490/0102: Tilt Right WiFi 802.11a 6Mbps CH104

Date: 25/03/2013

DUT: Sony Gaga Anna; Type: Gaga Anna; Serial: PM-0400-BV



0 dB = 1.46 W/kg = 1.64 dBW/kg

Communication System: WLAN 802.11; Frequency: 5520 MHz; Duty Cycle: 1:1

Medium: 5200/5500 MHz HSL Medium parameters used (interpolated): $f = 5520$ MHz; $\sigma = 4.981$ mho/m; $\epsilon_r = 35.432$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3814; ConvF(4.54, 4.54, 4.54); Calibrated: 24/09/2012;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn450; Calibrated: 22/01/2013
- Phantom: SAM B (Site 58); Type: Twin Phantom; Serial: TP:1020
- ; SEMCAD X Version 14.6.7 (6848)

Configuration/Tilt Right - Middle/Area Scan (111x181x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 1.42 W/kg

Configuration/Tilt Right - Middle/Zoom Scan (7x7x12) (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 12.116 V/m; Power Drift = -0.05 dB

Peak SAR (extrapolated) = 3.03 W/kg

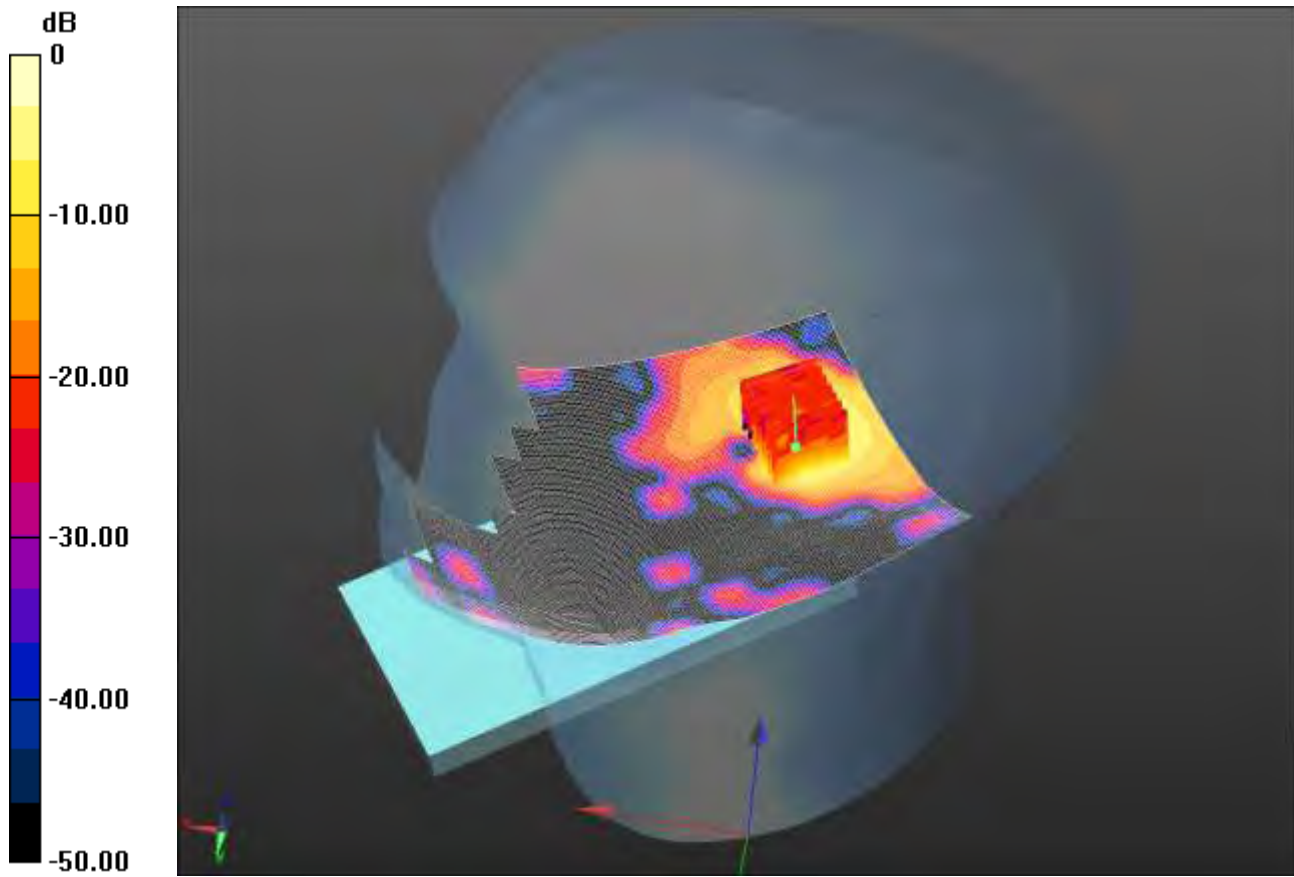
SAR(1 g) = 0.718 W/kg; SAR(10 g) = 0.209 W/kg

Maximum value of SAR (measured) = 1.46 W/kg

SCN/92490/103: Tilt Right WiFi 802.11a 6Mbps CH124

Date: 25/03/2013

DUT: Sony Gaga Anna; Type: Gaga Anna; Serial: PM-0400-BV



0 dB = 0.900 W/kg = -0.46 dBW/kg

Communication System: WLAN 802.11; Frequency: 5620 MHz; Duty Cycle: 1:1

Medium: 5200/5500 MHz HSL Medium parameters used (interpolated): $f = 5620$ MHz; $\sigma = 5.079$ mho/m; $\epsilon_r = 35.233$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3814; ConvF(4.26, 4.26, 4.26); Calibrated: 24/09/2012;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn450; Calibrated: 22/01/2013
- Phantom: SAM B (Site 58); Type: Twin Phantom; Serial: TP:1020
- ; SEMCAD X Version 14.6.7 (6848)

Configuration/Tilt Right - Middle/Area Scan (111x181x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 1.08 W/kg

Configuration/Tilt Right - Middle/Zoom Scan (7x7x12) (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 12.063 V/m; Power Drift = 0.07 dB

Peak SAR (extrapolated) = 1.74 W/kg

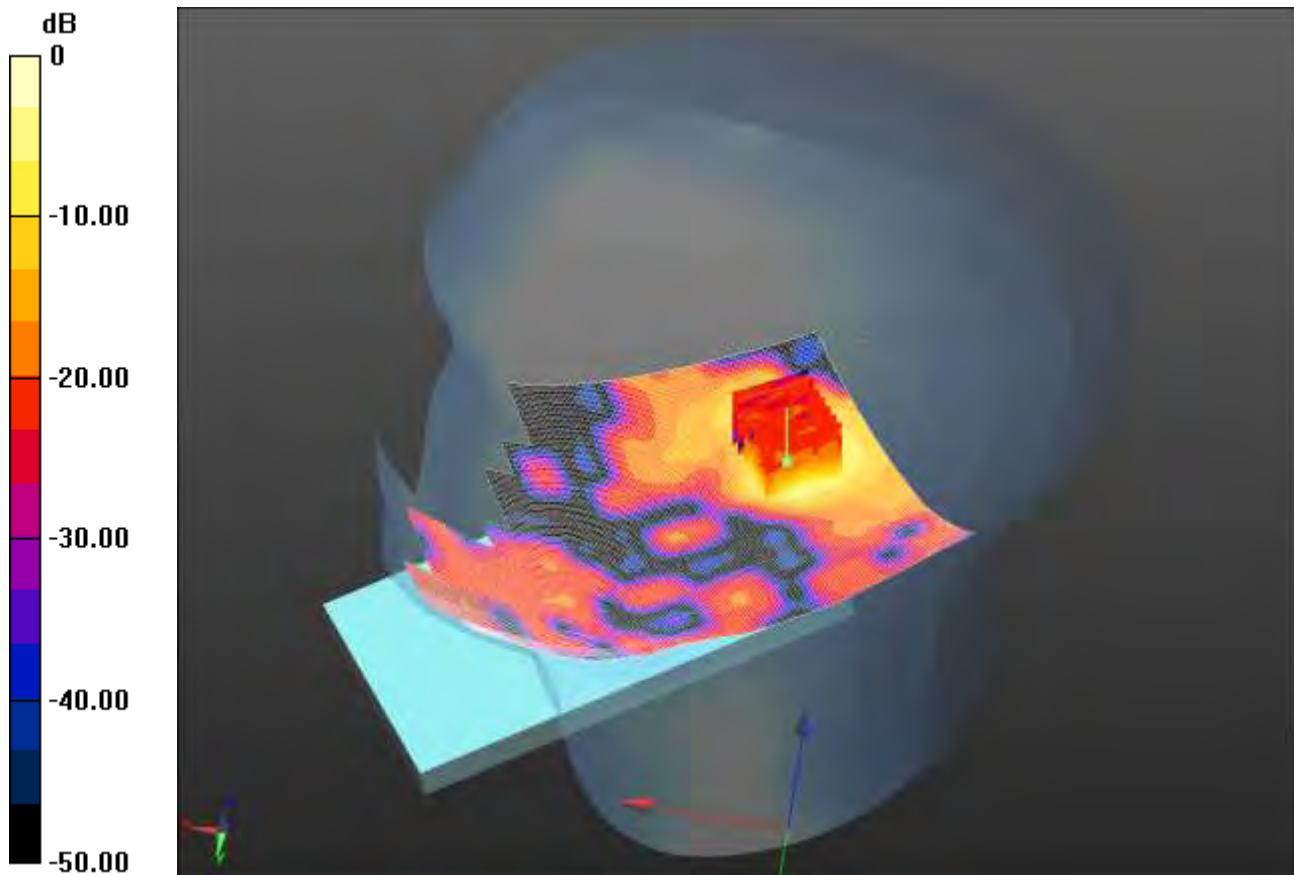
SAR(1 g) = 0.438 W/kg; SAR(10 g) = 0.132 W/kg

Maximum value of SAR (measured) = 0.900 W/kg

SCN/92490/104: Tilt Right WiFi 802.11a 6Mbps CH136

Date: 25/03/2013

DUT: Sony Gaga Anna; Type: Gaga Anna; Serial: PM-0400-BV



0 dB = 0.770 W/kg = -1.14 dBW/kg

Communication System: WLAN 802.11; Frequency: 5680 MHz; Duty Cycle: 1:1

Medium: 5200/5500 MHz HSL Medium parameters used (interpolated): $f = 5680$ MHz; $\sigma = 5.141$ mho/m; $\epsilon_r = 35.176$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3814; ConvF(4.26, 4.26, 4.26); Calibrated: 24/09/2012;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn450; Calibrated: 22/01/2013
- Phantom: SAM B (Site 58); Type: Twin Phantom; Serial: TP:1020
- ; SEMCAD X Version 14.6.7 (6848)

Configuration/Tilt Right - Middle/Area Scan (111x181x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.838 W/kg

Configuration/Tilt Right - Middle/Zoom Scan (7x7x12) (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 10.794 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 1.54 W/kg

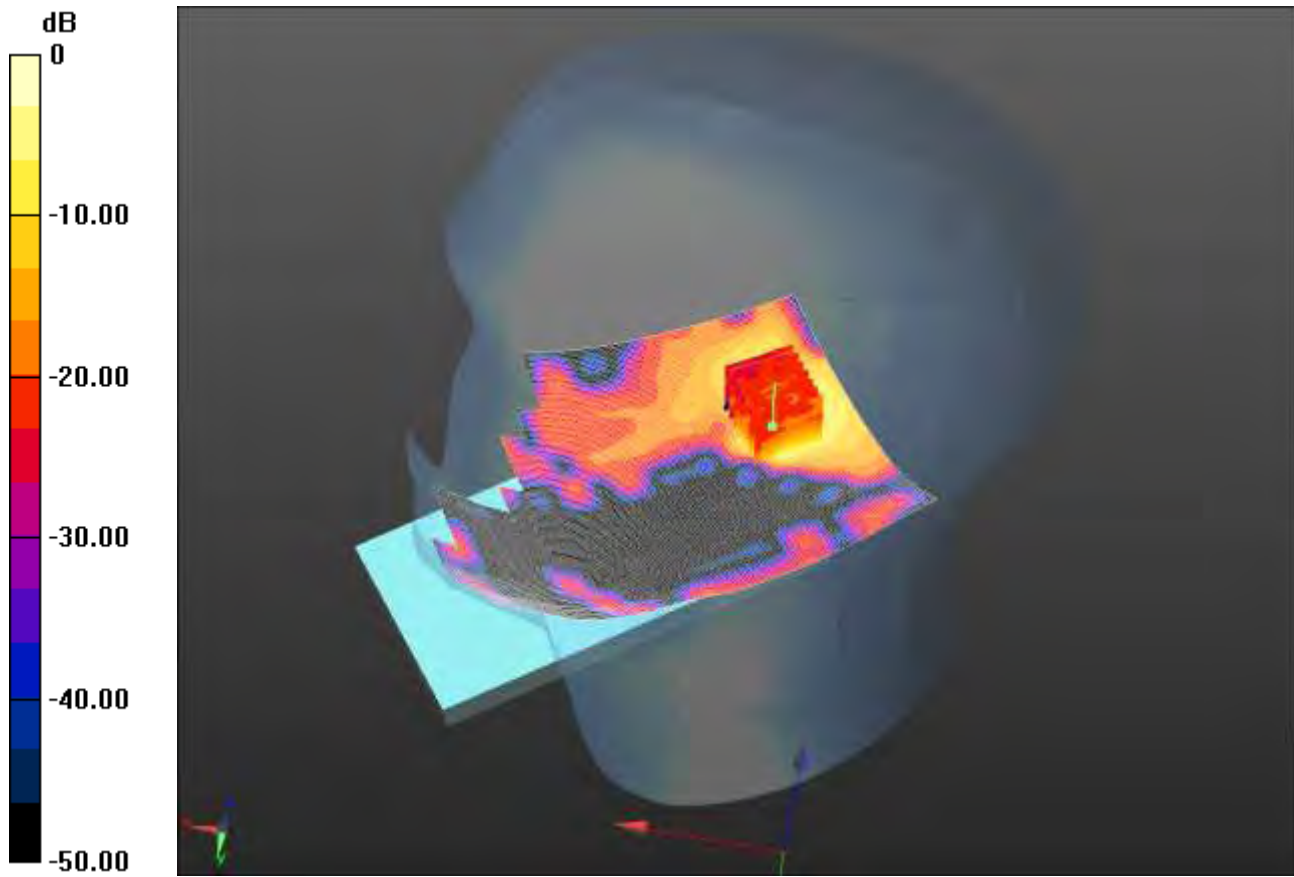
SAR(1 g) = 0.378 W/kg; SAR(10 g) = 0.113 W/kg

Maximum value of SAR (measured) = 0.770 W/kg

SCN/92490/105: Tilt Right WiFi 802.11a 6Mbps CH149

Date: 25/03/2013

DUT: Sony Gaga Anna; Type: Gaga Anna; Serial: PM-0400-BV



0 dB = 0.718 W/kg = -1.44 dBW/kg

Communication System: WLAN 802.11; Frequency: 5745 MHz; Duty Cycle: 1:1

Medium: 5200/5500 MHz HSL Medium parameters used (interpolated): $f = 5745$ MHz; $\sigma = 5.225$ mho/m; $\epsilon_r = 35.065$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3814; ConvF(4.5, 4.5, 4.5); Calibrated: 24/09/2012;

- Sensor-Surface: 2mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn450; Calibrated: 22/01/2013

- Phantom: SAM B (Site 58); Type: Twin Phantom; Serial: TP:1020

- ; SEMCAD X Version 14.6.7 (6848)

Configuration/Tilt Right - Middle/Area Scan (111x181x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.800 W/kg

Configuration/Tilt Right - Middle/Zoom Scan (7x7x12) (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 10.806 V/m; Power Drift = 0.11 dB

Peak SAR (extrapolated) = 1.49 W/kg

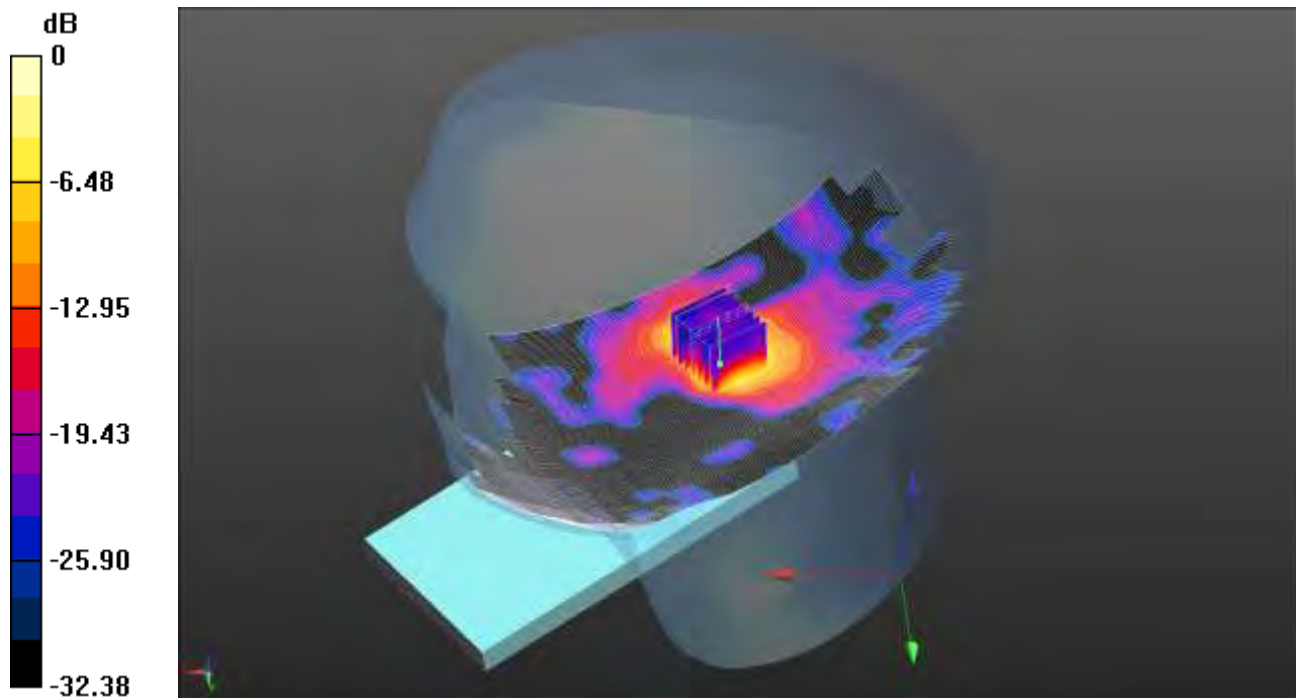
SAR(1 g) = 0.350 W/kg; SAR(10 g) = 0.102 W/kg

Maximum value of SAR (measured) = 0.718 W/kg

SCN/92490/106: Tilt Right Antenna Extended WiFi 802.11a 6Mbps CH104

Date: 25/03/2013

DUT: Sony Gaga Anna; Type: Gaga Anna; Serial: PM-0400-BV



0 dB = 1.03 W/kg = 0.13 dBW/kg

Communication System: WLAN 802.11; Frequency: 5520 MHz; Duty Cycle: 1:1

Medium: 5200/5500 MHz HSL Medium parameters used (interpolated): $f = 5520$ MHz; $\sigma = 4.981$ mho/m; $\epsilon_r = 35.432$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3814; ConvF(4.54, 4.54, 4.54); Calibrated: 24/09/2012;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn450; Calibrated: 22/01/2013
- Phantom: SAM B (Site 58); Type: Twin Phantom; Serial: TP:1020
- ; SEMCAD X Version 14.6.7 (6848)

Configuration/Tilt Right Antenna Extended - Middle/Area Scan (111x251x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 1.09 W/kg

Configuration/Tilt Right Antenna Extended - Middle/Zoom Scan (7x7x12) (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 13.450 V/m; Power Drift = -0.08 dB

Peak SAR (extrapolated) = 2.03 W/kg

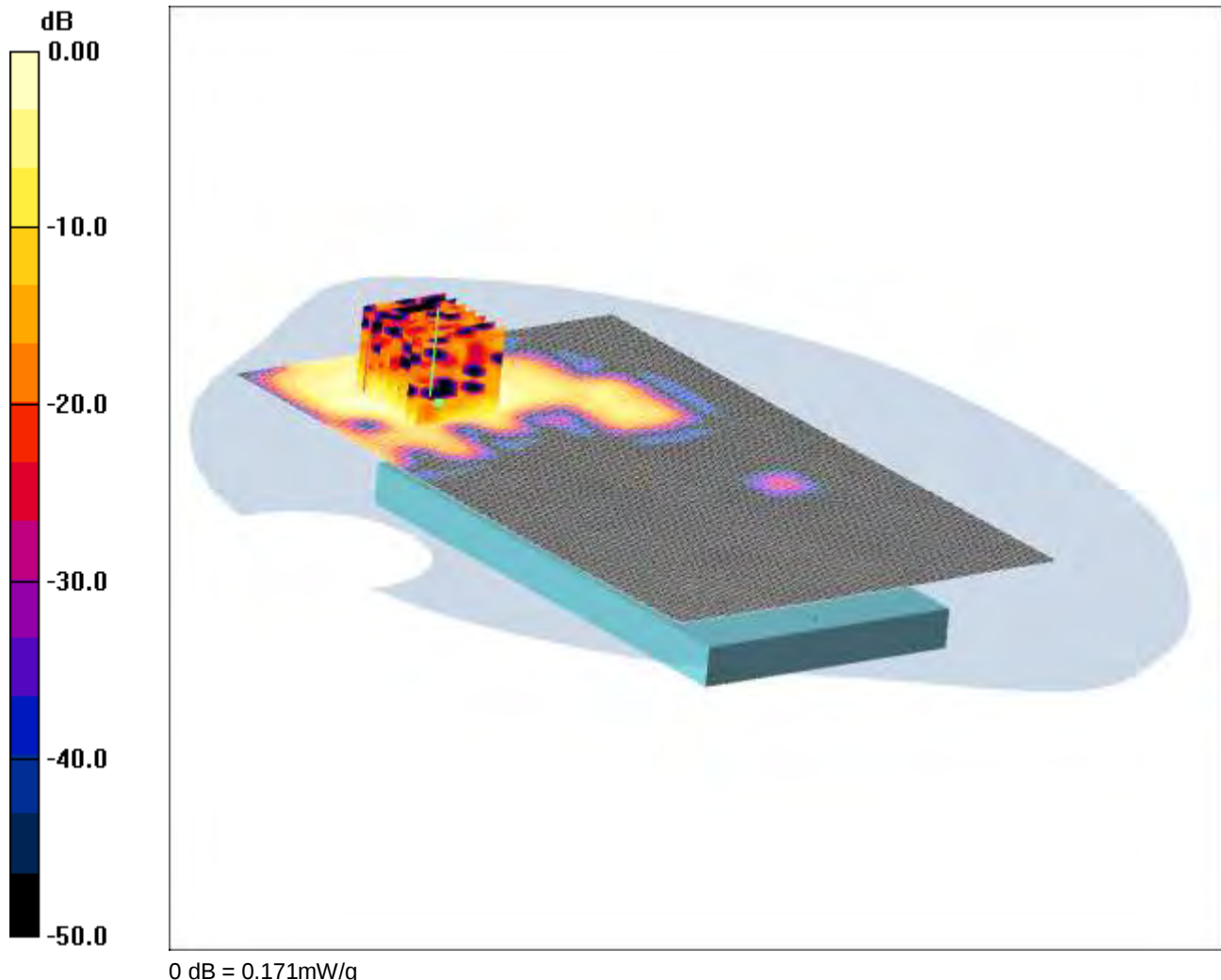
SAR(1 g) = 0.508 W/kg; SAR(10 g) = 0.154 W/kg

Maximum value of SAR (measured) = 1.03 W/kg

SCN/92490/107: Front of EUT Facing Phantom WiFi 802.11a 6Mbps CH48

Date 08/04/2013

DUT: Sony Gaga Anna; Type: Gaga Anna; Serial: PM-0400-BV



Communication System: WLAN 802.11a UNII; Frequency: 5240 MHz; Duty Cycle: 1:1

Medium: 5000MHz MSL Medium parameters used (interpolated): $f = 5240$ MHz; $\sigma = 5.41$ mho/m; $\epsilon_r = 48$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3814; ConvF(4.39, 4.39, 4.39); Calibrated: 24/09/2012
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn432; Calibrated: 02/05/2012
- Phantom: SAM 12b (Site 57); Type: SAM 4.0; Serial: TP:1031
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 145

Front of EUT Facing Phantom - Middle/Area Scan 3 (111x181x1): Measurement grid: $dx=10$ mm, $dy=10$ mm

Maximum value of SAR (interpolated) = 0.176 mW/g

Front of EUT Facing Phantom - Middle/Zoom Scan (7x7x12) 2 (7x7x12)/Cube 0: Measurement grid: $dx=4$ mm, $dy=4$ mm, $dz=2$ mm

Reference Value = 3.75 V/m; Power Drift = 0.155 dB

Peak SAR (extrapolated) = 0.303 W/kg

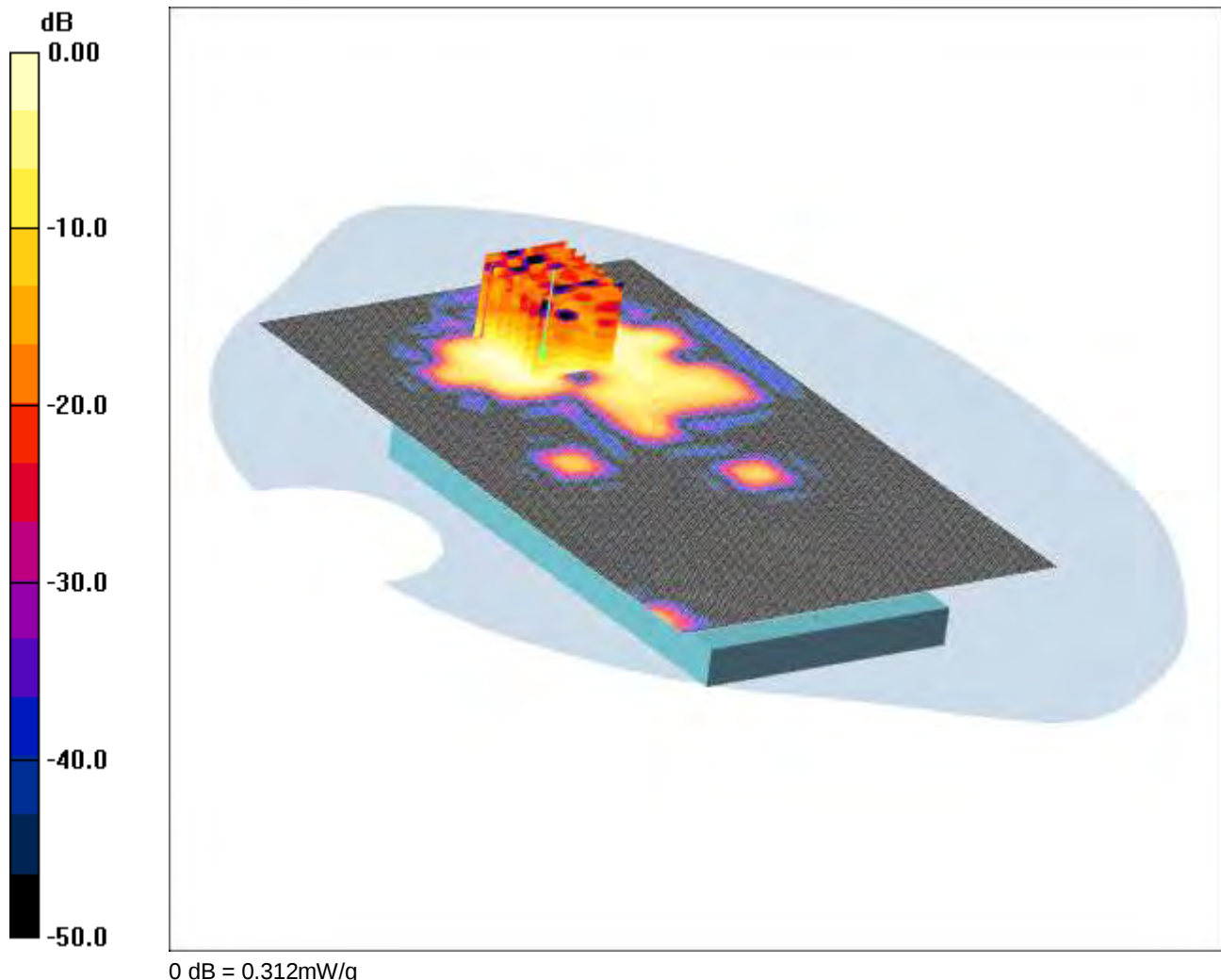
SAR(1 g) = 0.091 mW/g; SAR(10 g) = 0.032 mW/g

Maximum value of SAR (measured) = 0.171 mW/g

SCN/92490/108: Back of EUT Facing Phantom WiFi 802.11a 6Mbps CH48

Date 08/04/2013

DUT: Sony Gaga Anna; Type: Gaga Anna; Serial: PM-0400-BV



Communication System: WLAN 802.11a UNII; Frequency: 5240 MHz; Duty Cycle: 1:1

Medium: 5000MHz MSL Medium parameters used (interpolated): $f = 5240$ MHz; $\sigma = 5.41$ mho/m; $\epsilon_r = 48$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3814; ConvF(4.39, 4.39, 4.39); Calibrated: 24/09/2012

- Sensor-Surface: 2mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn432; Calibrated: 02/05/2012

- Phantom: SAM 12b (Site 57); Type: SAM 4.0; Serial: TP:1031

- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 145

Back of EUT Facing Phantom - Middle/Area Scan 3 (111x181x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.451 mW/g

Back of EUT Facing Phantom - Middle/Zoom Scan (7x7x12) 2 (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 7.46 V/m; Power Drift = -0.108 dB

Peak SAR (extrapolated) = 0.609 W/kg

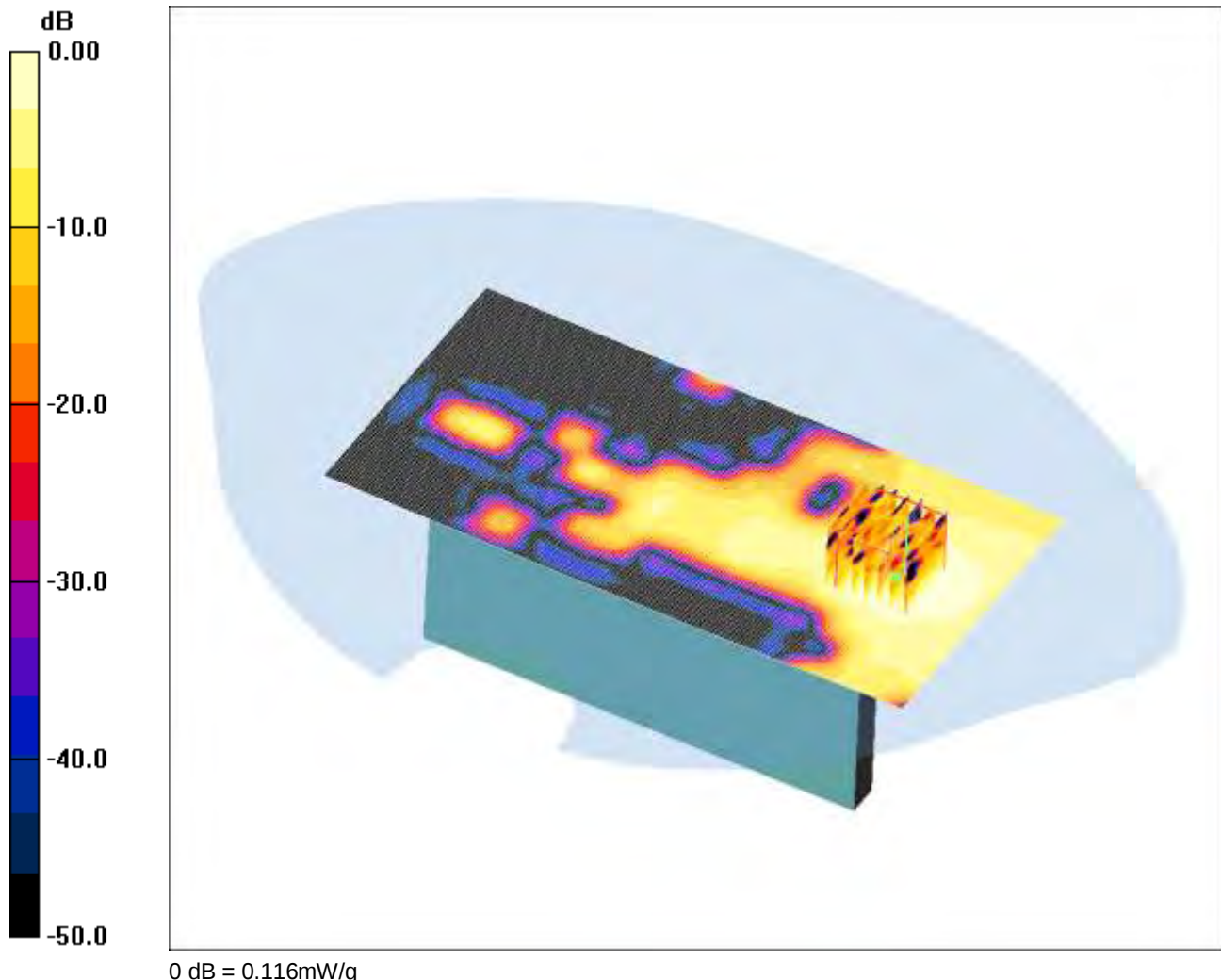
SAR(1 g) = 0.167 mW/g; SAR(10 g) = 0.061 mW/g

Maximum value of SAR (measured) = 0.312 mW/g

SCN/92490/109: Left Hand Side of EUT Facing Phantom WiFi 802.11a 6Mbps CH48

Date: 08/04/2013

DUT: Sony Gaga Anna; Type: Gaga Anna; Serial: PM-0400-BV



Communication System: WLAN 802.11a UNII; Frequency: 5240 MHz; Duty Cycle: 1:1

Medium: 5000MHz MSL Medium parameters used (interpolated): $f = 5240$ MHz; $\sigma = 5.41$ mho/m; $\epsilon_r = 48$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3814; ConvF(4.39, 4.39, 4.39); Calibrated: 24/09/2012

- Sensor-Surface: 2mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn432; Calibrated: 02/05/2012

- Phantom: SAM 12b (Site 57); Type: SAM 4.0; Serial: TP:1031

- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 145

Left Hand Side of EUT Facing Phantom - Middle/Area Scan 3 (91x181x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.109 mW/g

Left Hand Side of EUT Facing Phantom - Middle/Zoom Scan (7x7x12) 2 (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 4.33 V/m; Power Drift = 0.069 dB

Peak SAR (extrapolated) = 0.239 W/kg

SAR(1 g) = 0.064 mW/g; SAR(10 g) = 0.025 mW/g

Maximum value of SAR (measured) = 0.116 mW/g

SCN/92490/110: Top of EUT Facing Phantom WiFi 802.11a 6Mbps CH48

Date: 09/04/2013

DUT: Sony Gaga Anna; Type: Gaga Anna; Serial: PM-0400-BV



Communication System: WLAN 802.11a UNII; Frequency: 5240 MHz; Duty Cycle: 1:1

Medium: 5000MHz MSL Medium parameters used (interpolated): $f = 5240$ MHz; $\sigma = 5.41$ mho/m; $\epsilon_r = 48$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3814; ConvF(4.39, 4.39, 4.39); Calibrated: 24/09/2012

- Sensor-Surface: 2mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn432; Calibrated: 02/05/2012

- Phantom: SAM 12b (Site 57); Type: SAM 4.0; Serial: TP:1031

- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 145

Top of EUT Facing Phantom - Middle/Area Scan 3 (81x111x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.440 mW/g

Top of EUT Facing Phantom - Middle/Zoom Scan (7x7x12) 2 (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 7.45 V/m; Power Drift = 0.074 dB

Peak SAR (extrapolated) = 0.906 W/kg

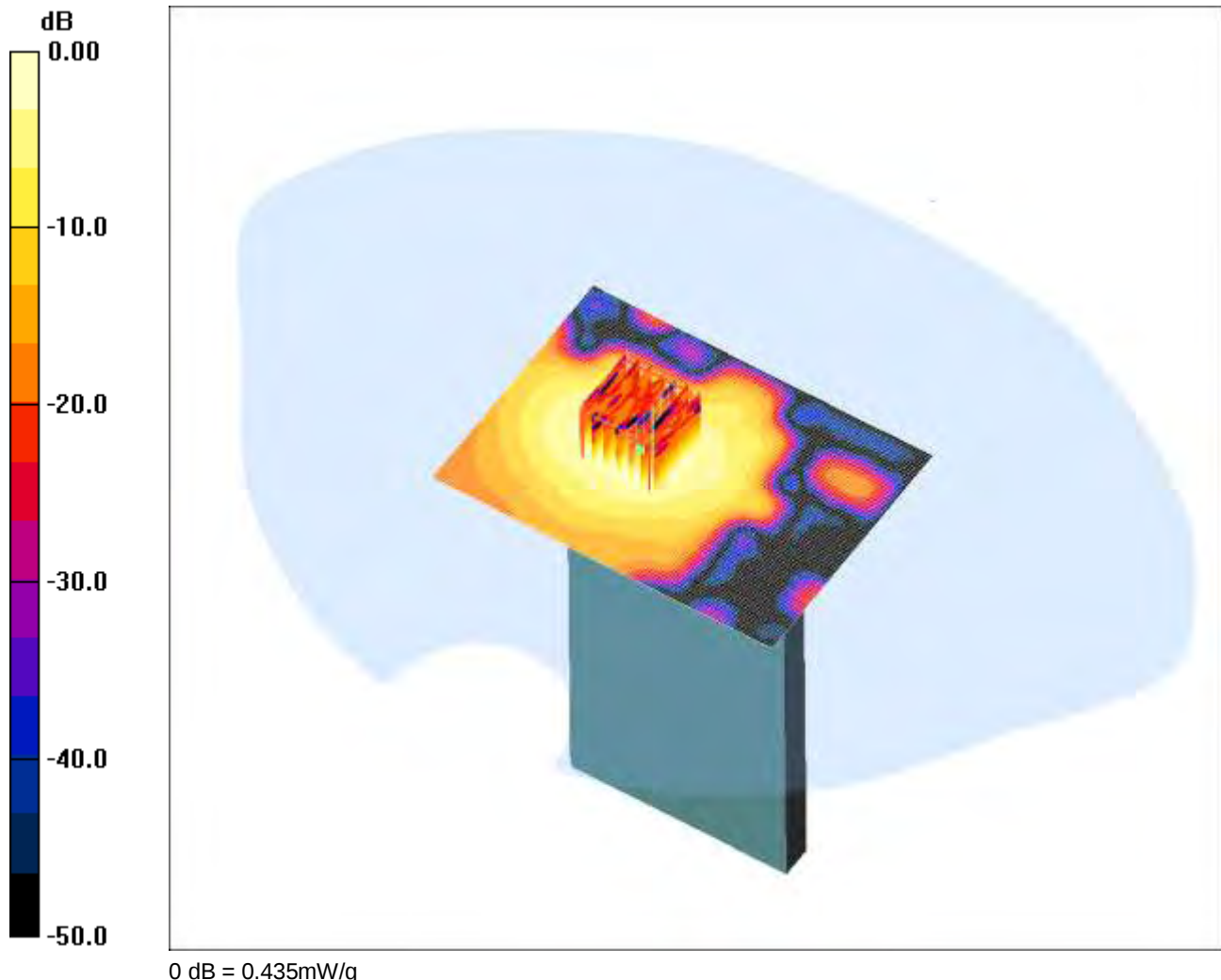
SAR(1 g) = 0.250 mW/g; SAR(10 g) = 0.091 mW/g

Maximum value of SAR (measured) = 0.474 mW/g

SCN/92490/111: Top of EUT Facing Phantom WiFi 802.11a 6Mbps CH52

Date: 09/04/2013

DUT: Sony Gaga Anna; Type: Gaga Anna; Serial: PM-0400-BV



Communication System: WLAN 802.11a UNII; Frequency: 5260 MHz; Duty Cycle: 1:1

Medium: 5000MHz MSL Medium parameters used (interpolated): $f = 5260$ MHz; $\sigma = 5.44$ mho/m; $\epsilon_r = 47.9$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3814; ConvF(4.11, 4.11, 4.11); Calibrated: 24/09/2012
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn432; Calibrated: 02/05/2012
- Phantom: SAM 12b (Site 57); Type: SAM 4.0; Serial: TP:1031
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 145

Top of EUT Facing Phantom - Middle/Area Scan 3 (81x111x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.415 mW/g

Top of EUT Facing Phantom - Middle/Zoom Scan (7x7x12) 2 (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 7.14 V/m; Power Drift = 0.088 dB

Peak SAR (extrapolated) = 0.818 W/kg

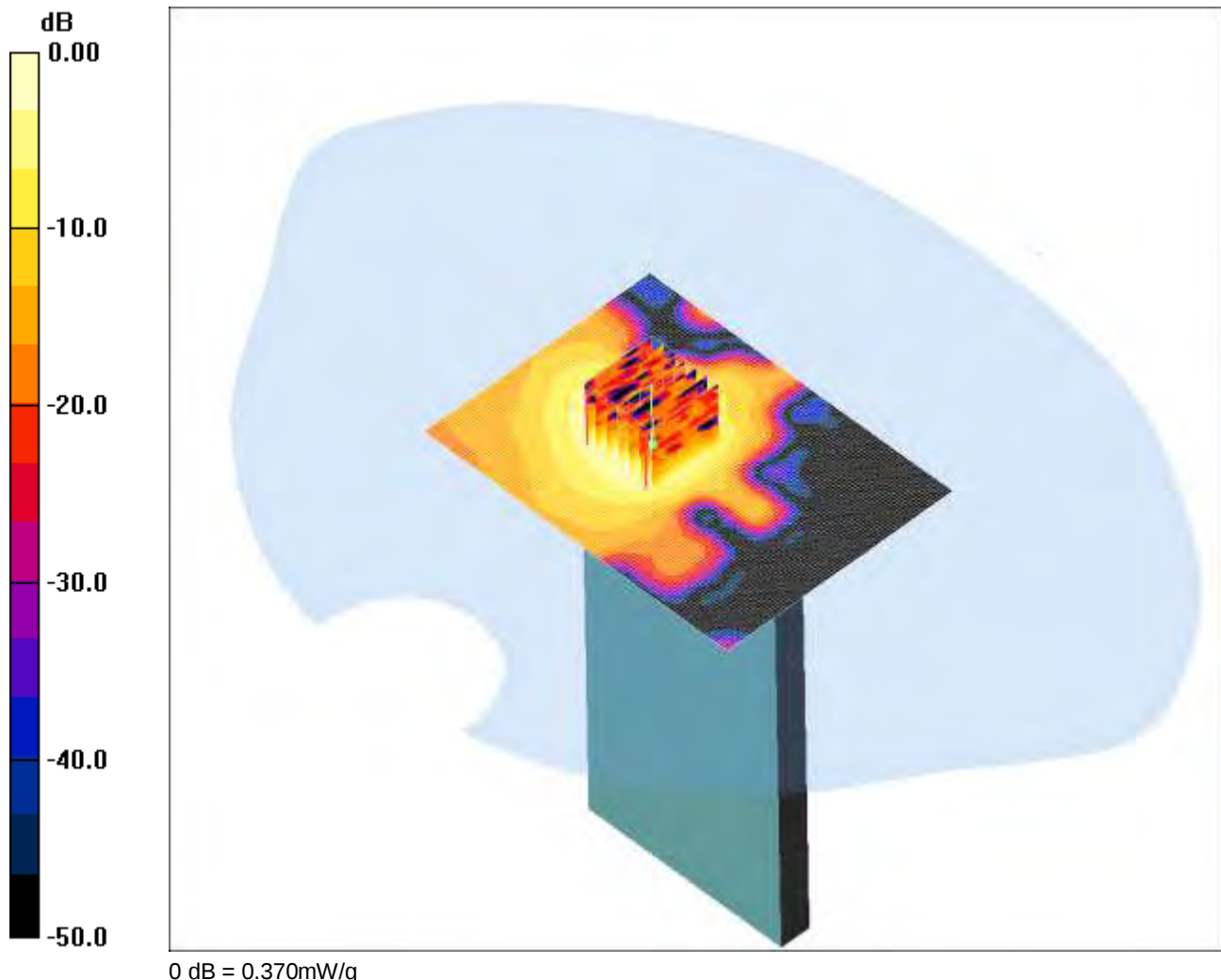
SAR(1 g) = 0.233 mW/g; SAR(10 g) = 0.087 mW/g

Maximum value of SAR (measured) = 0.435 mW/g

SCN/92490/112: Top of EUT Facing Phantom WiFi 802.11a 6Mbps CH116

Date: 09/04/2013

DUT: Sony Gaga Anna; Type: Gaga Anna; Serial: PM-0400-BV



Communication System: WLAN 802.11a UNII; Frequency: 5580 MHz; Duty Cycle: 1:1

Medium: 5000MHz MSL Medium parameters used (interpolated): $f = 5580$ MHz; $\sigma = 5.87$ mho/m; $\epsilon_r = 47.5$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3814; ConvF(3.71, 3.71, 3.71); Calibrated: 24/09/2012
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn432; Calibrated: 02/05/2012
- Phantom: SAM 12b (Site 57); Type: SAM 4.0; Serial: TP:1031
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 145

Top of EUT Facing Phantom - Middle/Area Scan 3 (81x111x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.340 mW/g

Top of EUT Facing Phantom - Middle/Zoom Scan (7x7x12) 2 (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 5.36 V/m; Power Drift = 0.178 dB

Peak SAR (extrapolated) = 0.743 W/kg

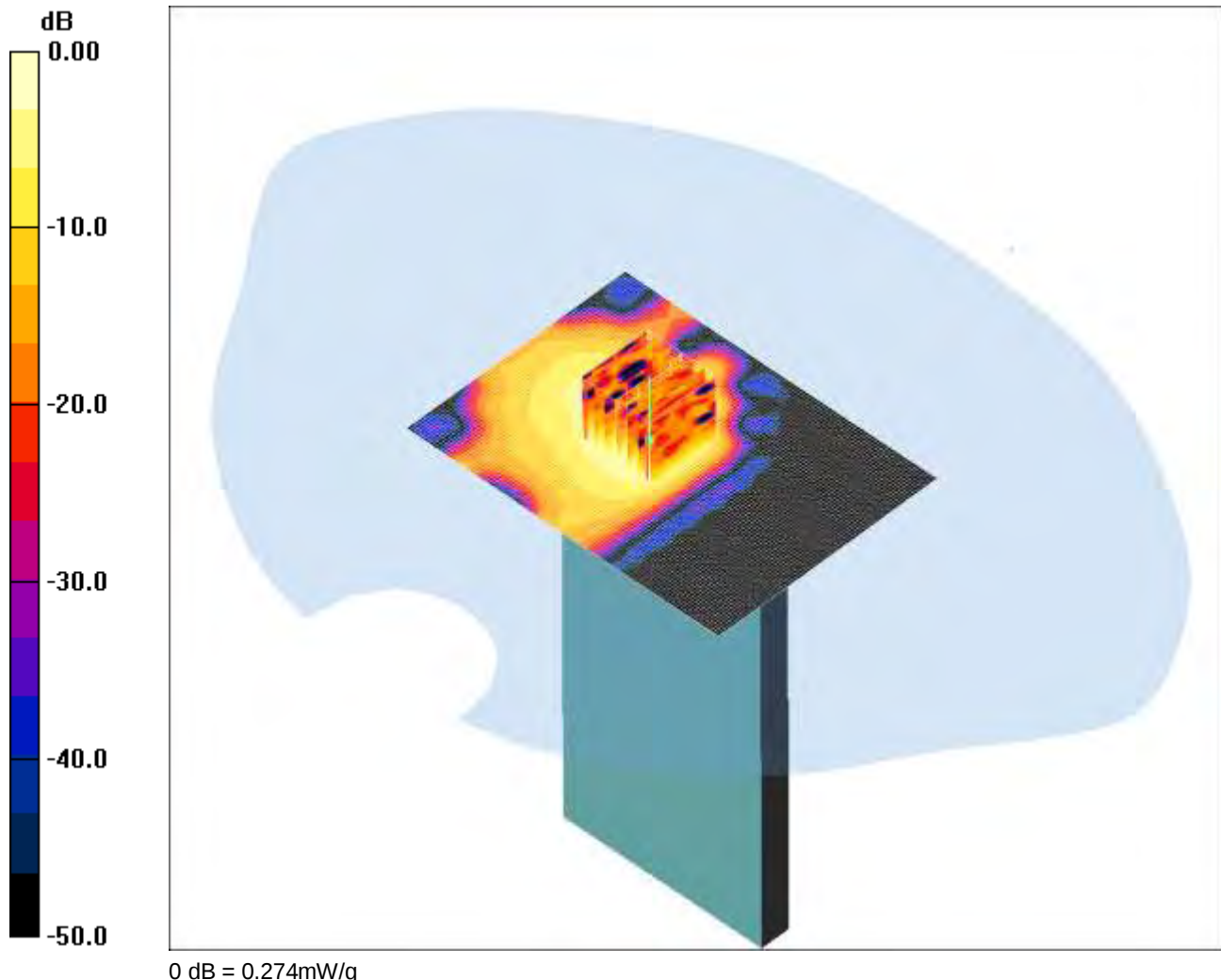
SAR(1 g) = 0.181 mW/g; SAR(10 g) = 0.058 mW/g

Maximum value of SAR (measured) = 0.370 mW/g

SCN/92490/113: Top of EUT Facing Phantom WiFi 802.11a 6Mbps CH149

Date: 09/04/2013

DUT: Sony Gaga Anna; Type: Gaga Anna; Serial: PM-0400-BV



Communication System: WLAN 802.11a UNII; Frequency: 5745 MHz; Duty Cycle: 1:1

Medium: 5000MHz MSL Medium parameters used (interpolated): $f = 5745$ MHz; $\sigma = 6.12$ mho/m; $\epsilon_r = 47.2$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3814; ConvF(3.97, 3.97, 3.97); Calibrated: 24/09/2012

- Sensor-Surface: 2mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn432; Calibrated: 02/05/2012

- Phantom: SAM 12b (Site 57); Type: SAM 4.0; Serial: TP:1031

- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 145

Top of EUT Facing Phantom - Middle/Area Scan 3 (81x111x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.266 mW/g

Top of EUT Facing Phantom - Middle/Zoom Scan (7x7x12) 2 (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 5.16 V/m; Power Drift = 0.120 dB

Peak SAR (extrapolated) = 0.505 W/kg

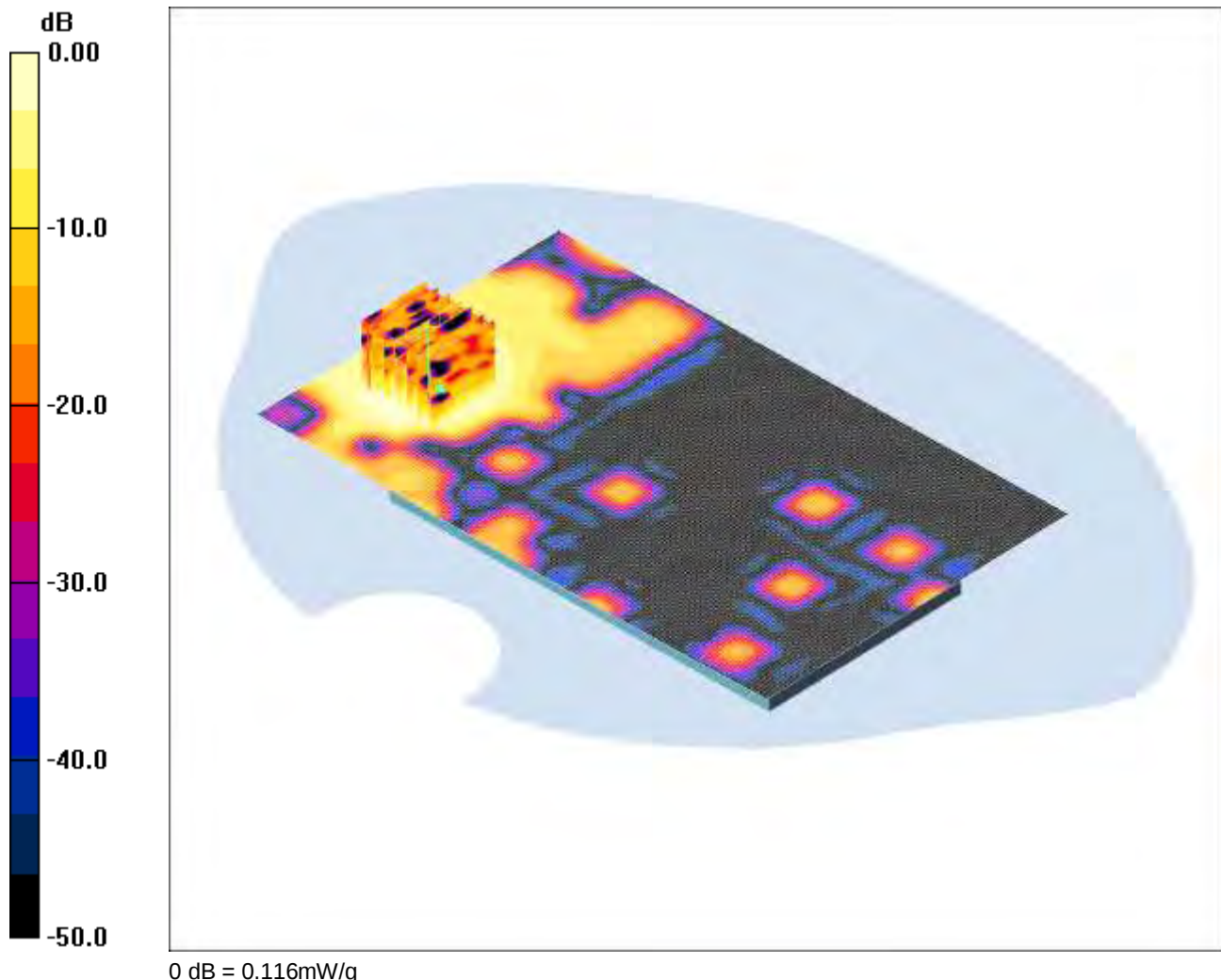
SAR(1 g) = 0.134 mW/g; SAR(10 g) = 0.044 mW/g

Maximum value of SAR (measured) = 0.274 mW/g

SCN/92490/114: Front of EUT Facing Phantom WiFi 802.11a 6Mbps at 15mm CH48

Date: 09/04/2013

DUT: Sony Gaga Anna; Type: Gaga Anna; Serial: PM-0400-BV



0 dB = 0.116mW/g

Communication System: WLAN 802.11a UNII; Frequency: 5240 MHz; Duty Cycle: 1:1

Medium: 5000MHz MSL Medium parameters used (interpolated): $f = 5240$ MHz; $\sigma = 5.41$ mho/m; $\epsilon_r = 48$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3814; ConvF(4.39, 4.39, 4.39); Calibrated: 24/09/2012

- Sensor-Surface: 2mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn432; Calibrated: 02/05/2012

- Phantom: SAM 12b (Site 57); Type: SAM 4.0; Serial: TP:1031

- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 145

Front of EUT Facing Phantom at 15mm- Middle/Area Scan (111x181x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.113 mW/g

Front of EUT Facing Phantom at 15mm- Middle/Zoom Scan (7x7x12) (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 4.88 V/m; Power Drift = -0.124 dB

Peak SAR (extrapolated) = 0.206 W/kg

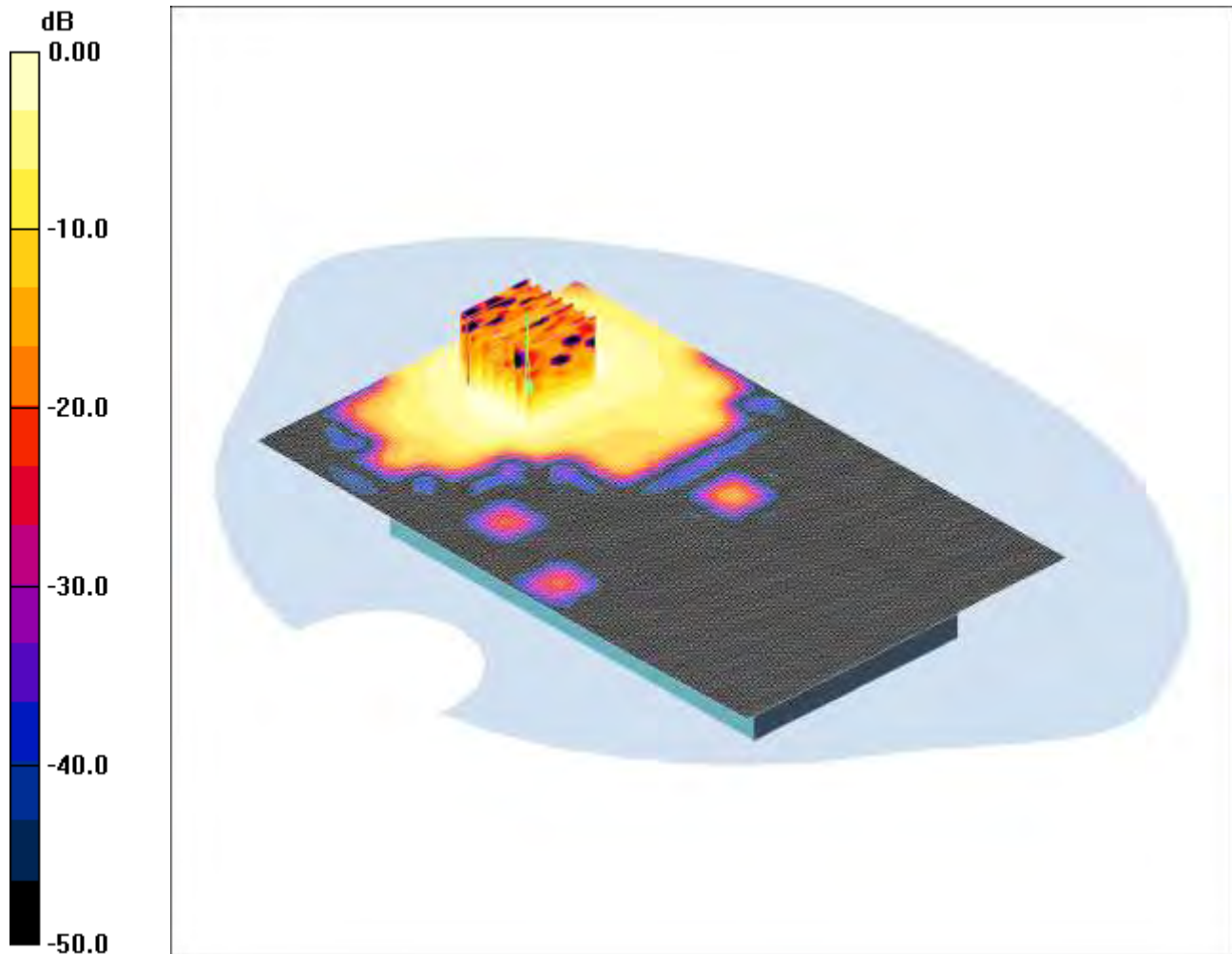
SAR(1 g) = 0.058 mW/g; SAR(10 g) = 0.022 mW/g

Maximum value of SAR (measured) = 0.116 mW/g

SCN/92490/115: Back of EUT Facing Phantom WiFi 802.11a 6Mbps at 15mm CH48

Date: 09/04/2013

DUT: Sony Gaga Anna; Type: Gaga Anna; Serial: PM-0400-BV



0 dB = 0.163mW/g

Communication System: WLAN 802.11a UNII; Frequency: 5240 MHz; Duty Cycle: 1:1

Medium: 5000MHz MSL Medium parameters used (interpolated): $f = 5240$ MHz; $\sigma = 5.41$ mho/m; $\epsilon_r = 48$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3814; ConvF(4.39, 4.39, 4.39); Calibrated: 24/09/2012

- Sensor-Surface: 2mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn432; Calibrated: 02/05/2012

- Phantom: SAM 12b (Site 57); Type: SAM 4.0; Serial: TP:1031

- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 145

Back of EUT Facing Phantom at 15mm - Middle/Area Scan (111x181x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.154 mW/g

Back of EUT Facing Phantom at 15mm - Middle/Zoom Scan (7x7x12) 2 (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 5.88 V/m; Power Drift = -0.073 dB

Peak SAR (extrapolated) = 0.332 W/kg

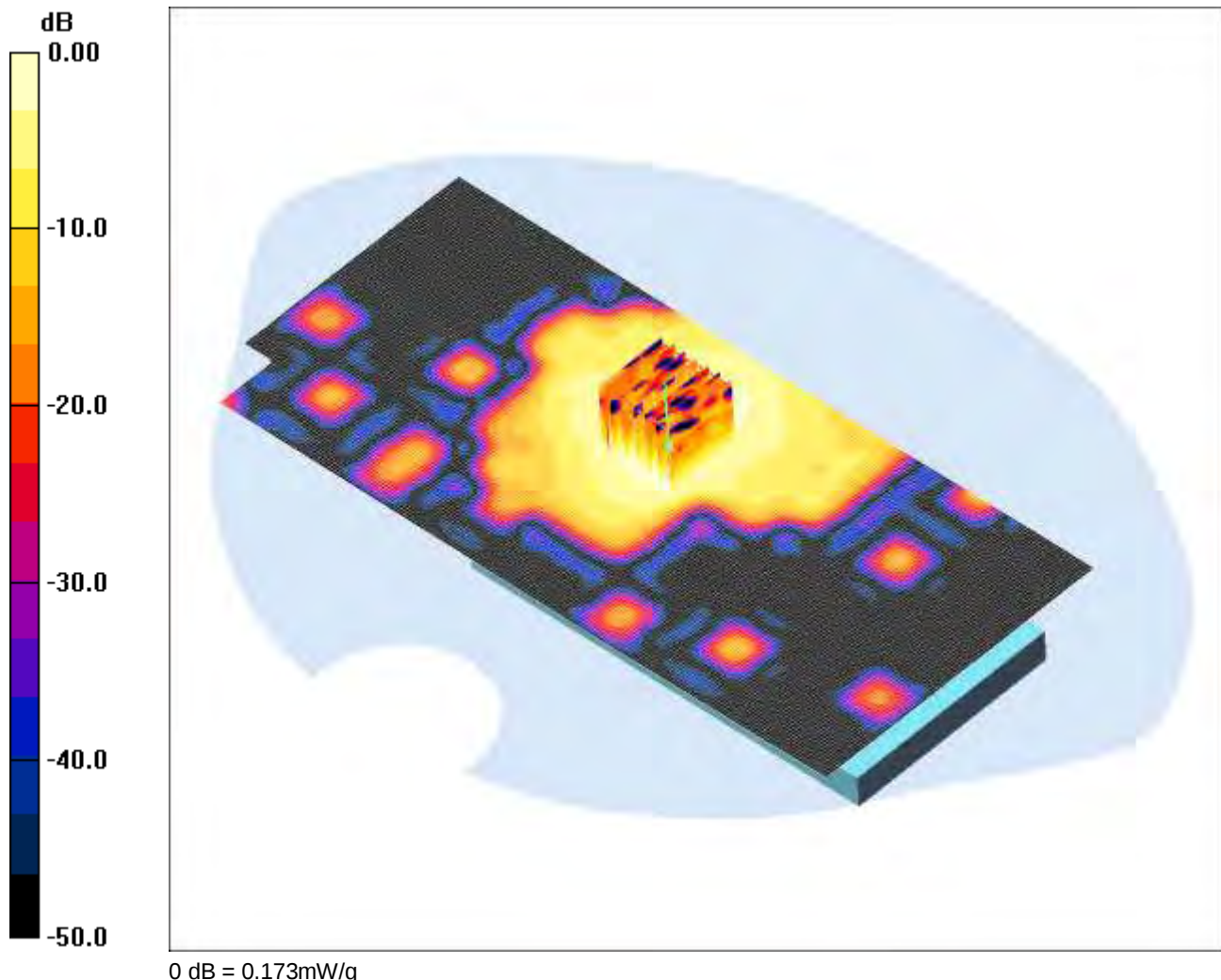
SAR(1 g) = 0.090 mW/g; SAR(10 g) = 0.037 mW/g

Maximum value of SAR (measured) = 0.163 mW/g

SCN/92490/116: Back of EUT Facing Phantom WiFi 802.11a 6Mbps at 15mm with Extended Antenna CH48

Date: 09/04/2013

DUT: Sony Gaga Anna; Type: Gaga Anna; Serial: PM-0400-BV



0 dB = 0.173mW/g

Communication System: WLAN 802.11a UNII; Frequency: 5240 MHz; Duty Cycle: 1:1

Medium: 5000MHz MSL Medium parameters used (interpolated): $f = 5240$ MHz; $\sigma = 5.41$ mho/m; $\epsilon_r = 48$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3814; ConvF(4.39, 4.39, 4.39); Calibrated: 24/09/2012

- Sensor-Surface: 2mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn432; Calibrated: 02/05/2012

- Phantom: SAM 12b (Site 57); Type: SAM 4.0; Serial: TP:1031

- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 145

Back of EUT Facing Phantom at 15mm with Extended Antenna- Middle/Area Scan (101x221x1):

Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.173 mW/g

Back of EUT Facing Phantom at 15mm with Extended Antenna- Middle/Zoom Scan (7x7x12) 2

(7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 5.14 V/m; Power Drift = 0.132 dB

Peak SAR (extrapolated) = 0.346 W/kg

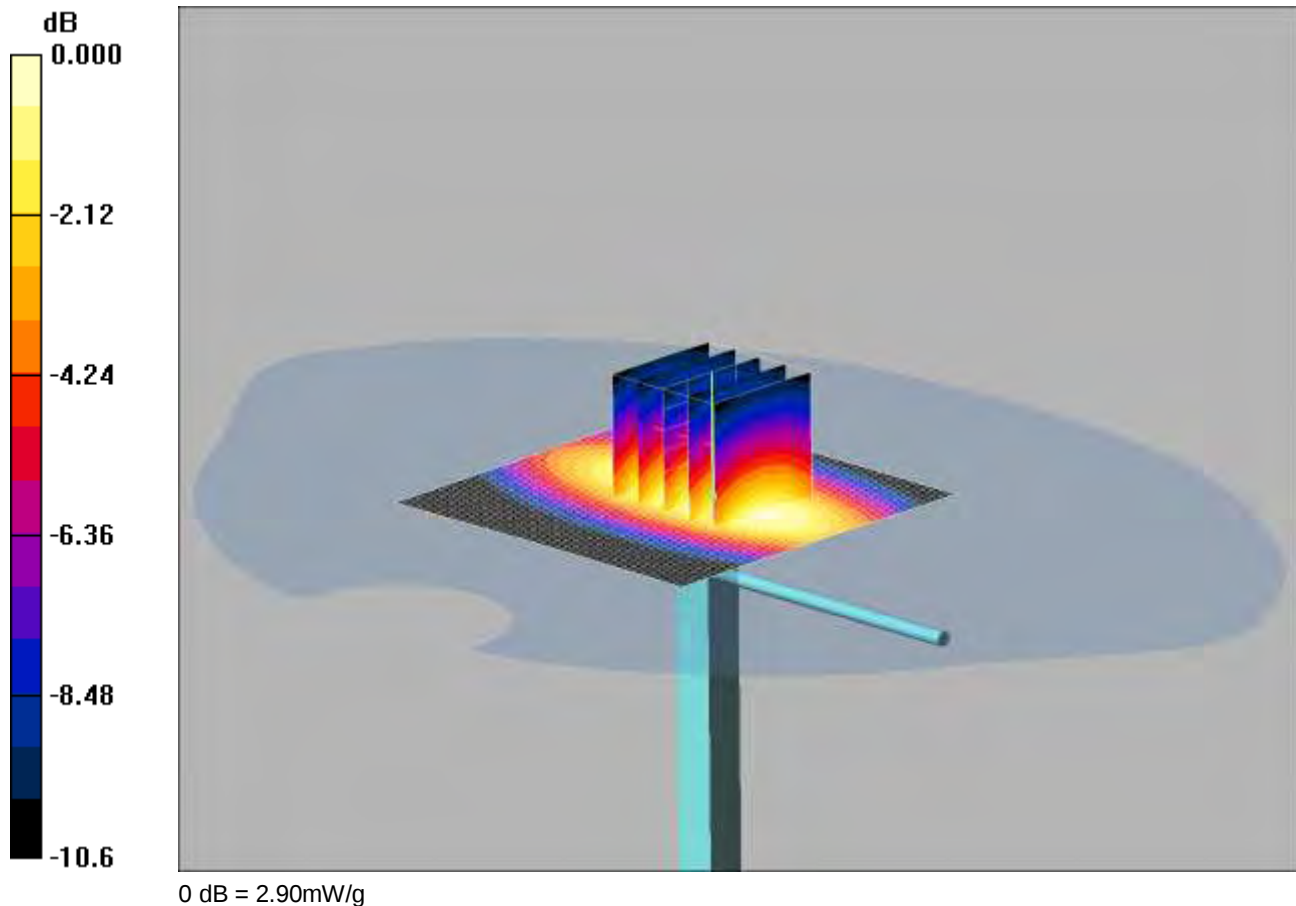
SAR(1 g) = 0.098 mW/g; SAR(10 g) = 0.039 mW/g

Maximum value of SAR (measured) = 0.173 mW/g

SCN/92490/117: System Performance Check 900MHz Head 13 03 13

Date: 13/03/2013

DUT: Dipole 900 MHz; SN: 035; Type: D900V2; Serial: SN035



Communication System: CW; Frequency: 900 MHz; Duty Cycle: 1:1

Medium: 900 MHz HSL Medium parameters used: $f = 900 \text{ MHz}$; $\sigma = 0.978 \text{ mho/m}$; $\epsilon_r = 41.3$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(6.18, 6.18, 6.18); Calibrated: 11/05/2012

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn431; Calibrated: 20/09/2012

- Phantom: SAM 12b (Site 56); Type: SAM 4.0; Serial: TP:1020

- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

d=15mm, Pin=250mW 2/Area Scan (61x61x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 2.88 mW/g

d=15mm, Pin=250mW 2/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 56.2 V/m; Power Drift = 0.006 dB

Peak SAR (extrapolated) = 3.87 W/kg

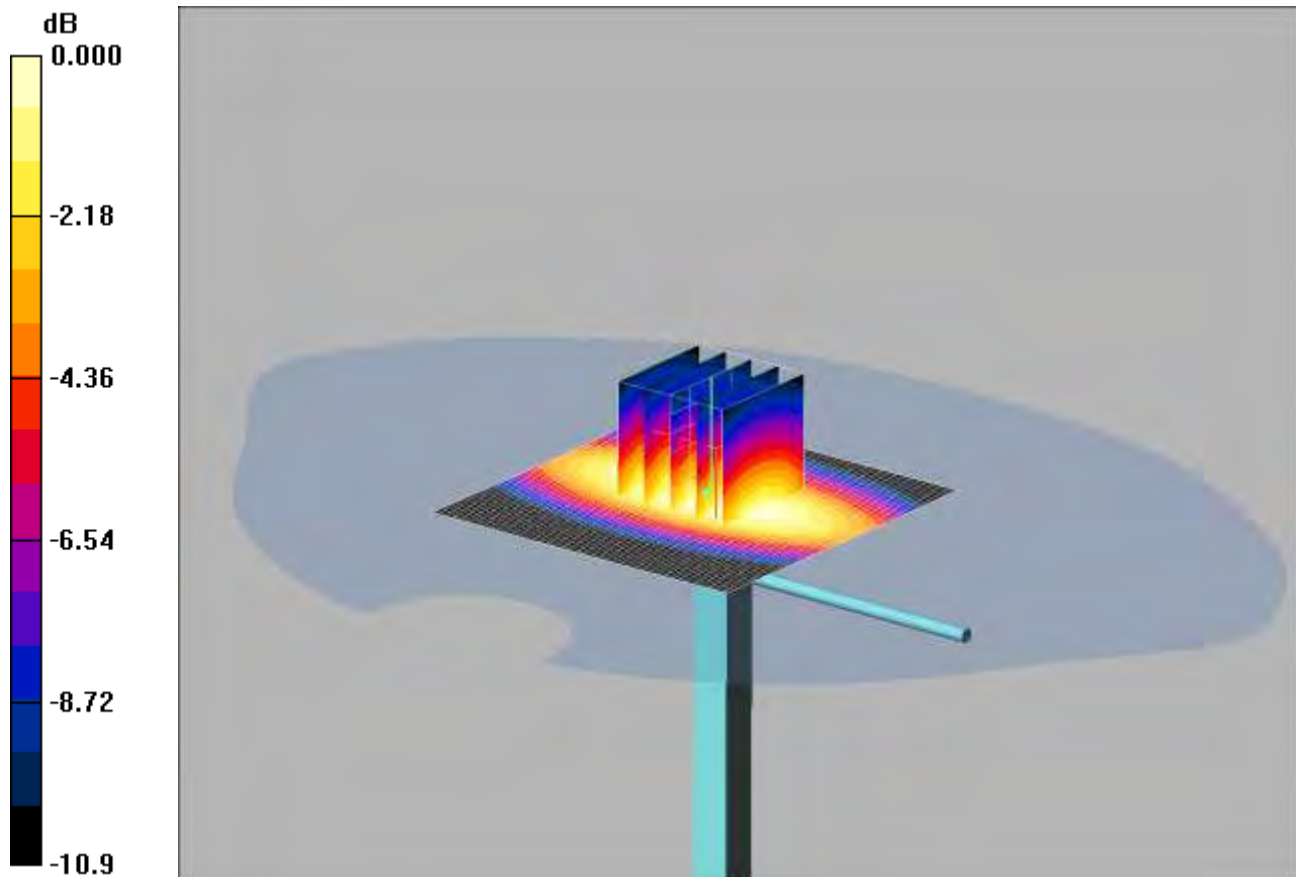
SAR(1 g) = 2.66 mW/g; SAR(10 g) = 1.73 mW/g

Maximum value of SAR (measured) = 2.90 mW/g

SCN/92490/118: System Performance Check 900MHz Body 14 03 13

Date: 14/03/2013

DUT: Dipole 900 MHz; SN: 035; Type: D900V2; Serial: SN035



0 dB = 2.90mW/g

Communication System: CW; Frequency: 900 MHz; Duty Cycle: 1:1

Medium: 900 MHz MSL Medium parameters used: $f = 900 \text{ MHz}$; $\sigma = 1.07 \text{ mho/m}$; $\epsilon_r = 52.9$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(6.26, 6.26, 6.26); Calibrated: 11/05/2012

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn431; Calibrated: 20/09/2012

- Phantom: SAM 12a (Site 56); Type: SAM 4.0; Serial: TP:1020

- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

d=15mm, Pin=250mW/Area Scan (61x61x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 2.96 mW/g

d=15mm, Pin=250mW/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 54.4 V/m; Power Drift = -0.081 dB

Peak SAR (extrapolated) = 3.85 W/kg

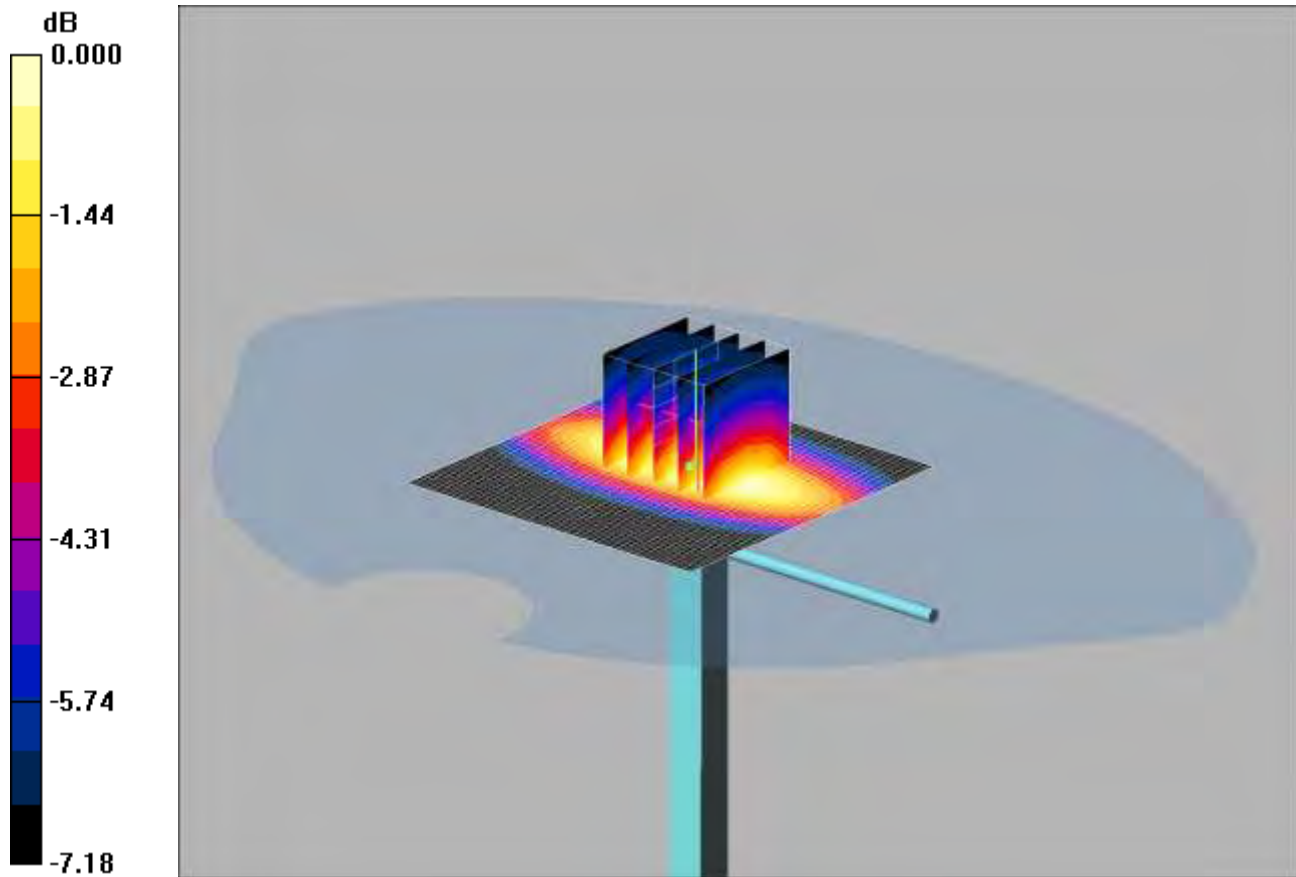
SAR(1 g) = 2.68 mW/g; SAR(10 g) = 1.75 mW/g

Maximum value of SAR (measured) = 2.90 mW/g

SCN/92490/119: System Performance Check 900MHz Body 15 03 13

Date: 15/03/2013

DUT: Dipole 900 MHz; SN: 035; Type: D900V2; Serial: SN035



0 dB = 2.78mW/g

Communication System: CW; Frequency: 900 MHz; Duty Cycle: 1:1

Medium: 900 MHz MSL Medium parameters used: $f = 900 \text{ MHz}$; $\sigma = 1.07 \text{ mho/m}$; $\epsilon_r = 52.9$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(6.26, 6.26, 6.26); Calibrated: 11/05/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn431; Calibrated: 20/09/2012
- Phantom: SAM 12a (Site 56); Type: SAM 4.0; Serial: TP:1020
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

d=15mm, Pin=250mW/Area Scan (61x61x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 2.82 mW/g

d=15mm, Pin=250mW/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 52.5 V/m; Power Drift = 0.019 dB

Peak SAR (extrapolated) = 3.49 W/kg

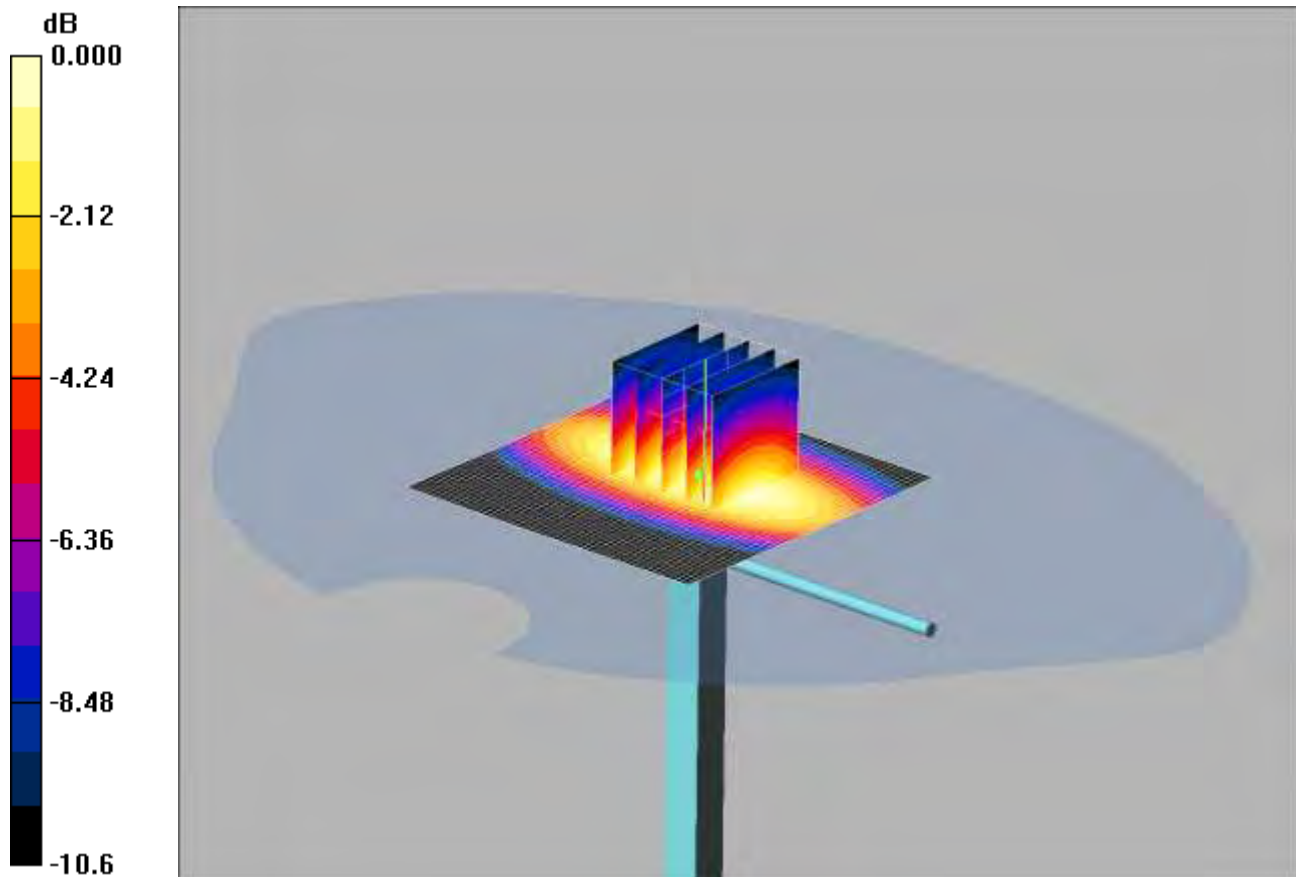
SAR(1 g) = 2.59 mW/g; SAR(10 g) = 1.8 mW/g

Maximum value of SAR (measured) = 2.78 mW/g

SCN/92490/120: System Performance Check 900MHz Body 18 03 13

Date: 18/03/2013

DUT: Dipole 900 MHz; SN: 035; Type: D900V2; Serial: SN035



0 dB = 2.92mW/g

Communication System: CW; Frequency: 900 MHz; Duty Cycle: 1:1

Medium: 900 MHz MSL Medium parameters used: $f = 900 \text{ MHz}$; $\sigma = 1.05 \text{ mho/m}$; $\epsilon_r = 53$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(6.26, 6.26, 6.26); Calibrated: 11/05/2012

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn431; Calibrated: 20/09/2012

- Phantom: SAM 12a (Site 56); Type: SAM 4.0; Serial: TP:1020

- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

d=15mm, Pin=250mW/Area Scan (61x61x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 2.94 mW/g

d=15mm, Pin=250mW/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 53.8 V/m; Power Drift = -0.001 dB

Peak SAR (extrapolated) = 3.83 W/kg

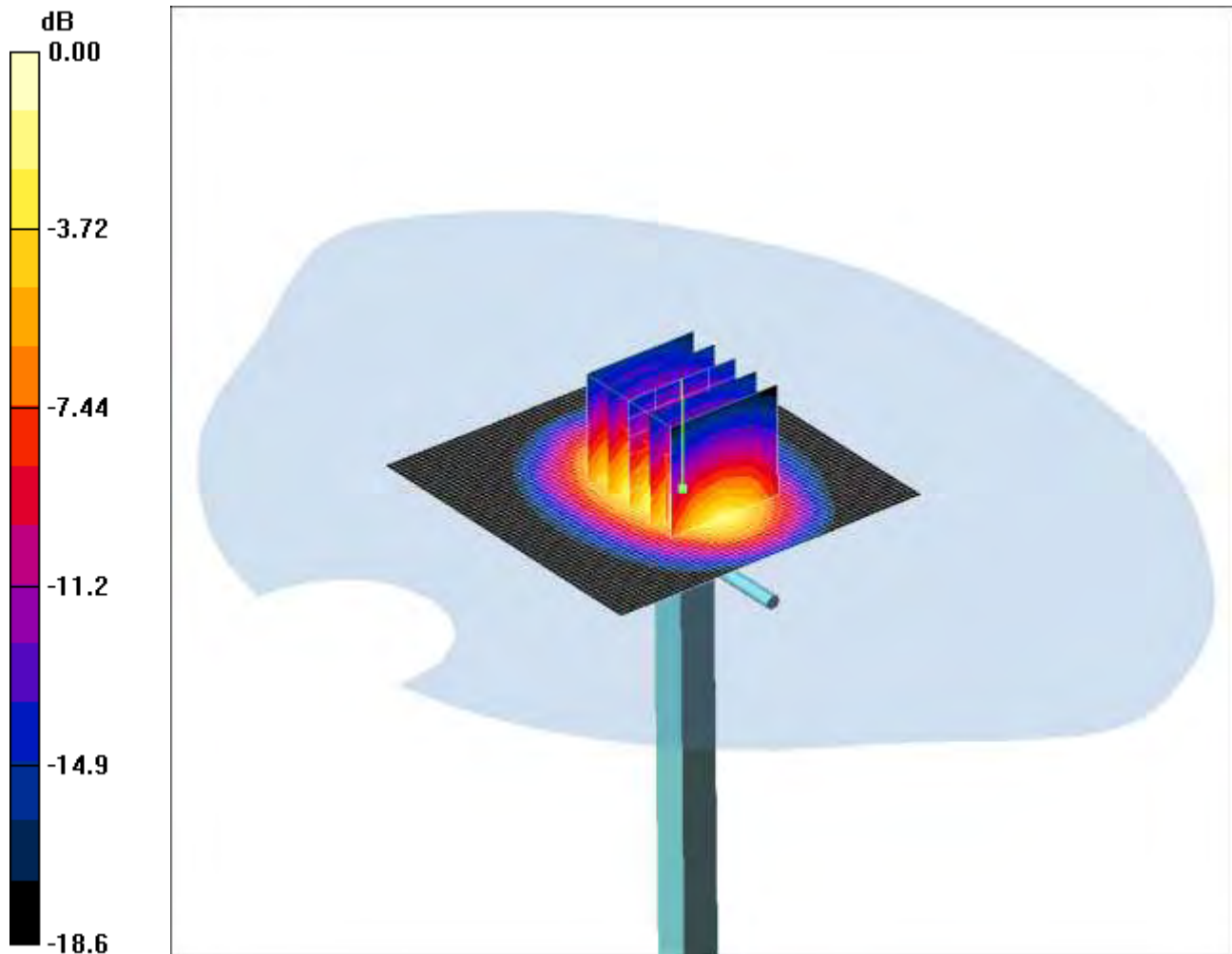
SAR(1 g) = 2.71 mW/g; SAR(10 g) = 1.78 mW/g

Maximum value of SAR (measured) = 2.92 mW/g

SCN/92490/121: System Performance Check 1900MHz Head 18 03 13

Date: 18/03/2013

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: SN537



0 dB = 10.6mW/g

Communication System: CW; Frequency: 1900 MHz; Duty Cycle: 1:1

Medium: 1900 MHz HSL Medium parameters used: $f = 1900 \text{ MHz}$; $\sigma = 1.43 \text{ mho/m}$; $\epsilon_r = 39$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1528; ConvF(4.92, 4.92, 4.92); Calibrated: 26/07/2012

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn432; Calibrated: 02/05/2012

- Phantom: SAM 12b (Site 57); Type: SAM 4.0; Serial: TP:1031

- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 145

d=10mm, Pin=250mW/Area Scan (61x61x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 12.0 mW/g

d=10mm, Pin=250mW/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 90.9 V/m; Power Drift = -0.052 dB

Peak SAR (extrapolated) = 16.3 W/kg

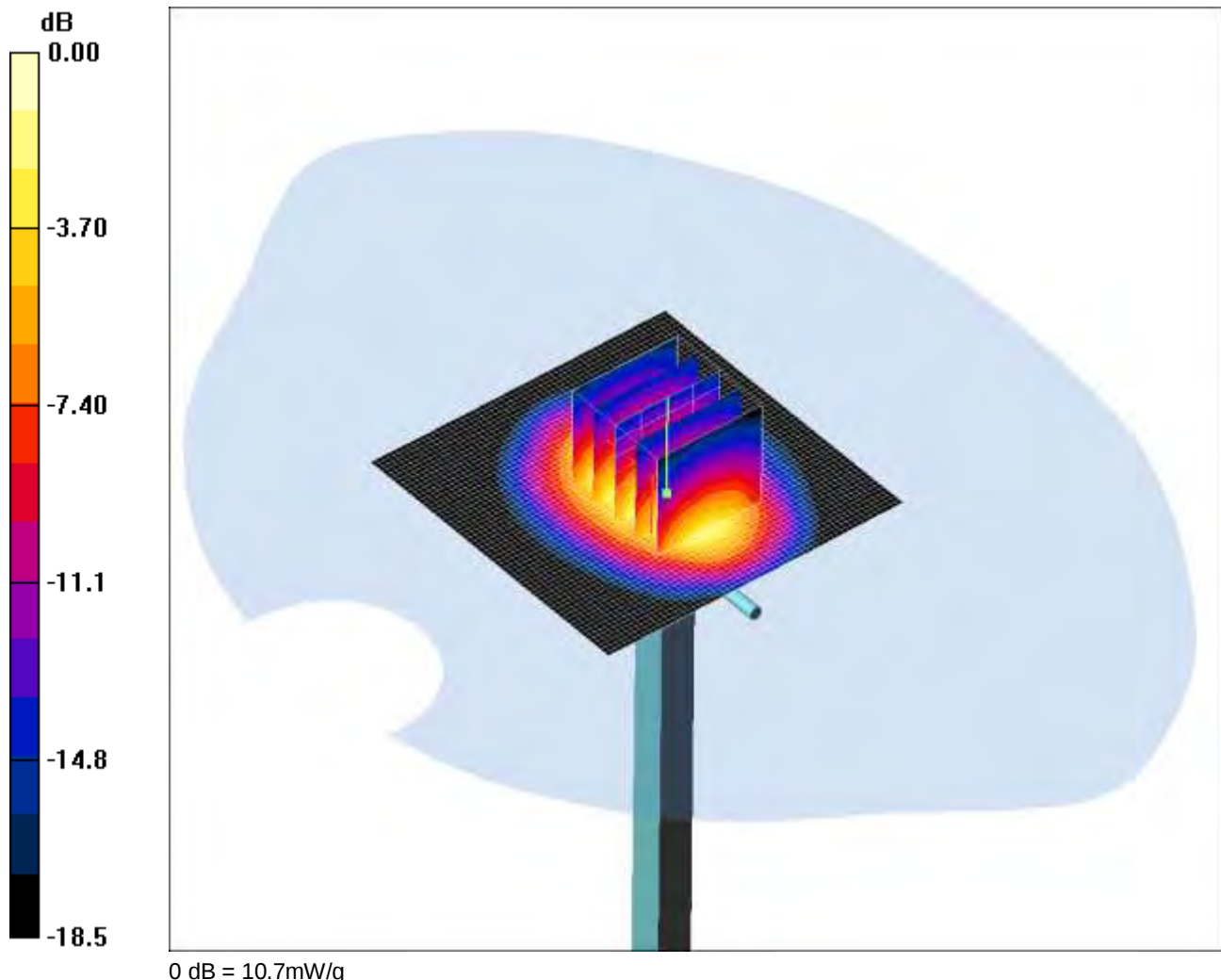
SAR(1 g) = 9.49 mW/g; SAR(10 g) = 5 mW/g

Maximum value of SAR (measured) = 10.6 mW/g

SCN/92490/122: System Performance Check 1900MHz Head 19 03 13

Date: 19/03/2013

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: SN537



Communication System: CW; Frequency: 1900 MHz; Duty Cycle: 1:1

Medium: 1900 MHz HSL Medium parameters used: $f = 1900 \text{ MHz}$; $\sigma = 1.43 \text{ mho/m}$; $\epsilon_r = 39$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1528; ConvF(4.92, 4.92, 4.92); Calibrated: 26/07/2012

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn432; Calibrated: 02/05/2012

- Phantom: SAM 12b (Site 57); Type: SAM 4.0; Serial: TP:1031

- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 145

d=10mm, Pin=250mW/Area Scan (61x61x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 12.2 mW/g

d=10mm, Pin=250mW/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 90.7 V/m; Power Drift = -0.050 dB

Peak SAR (extrapolated) = 16.2 W/kg

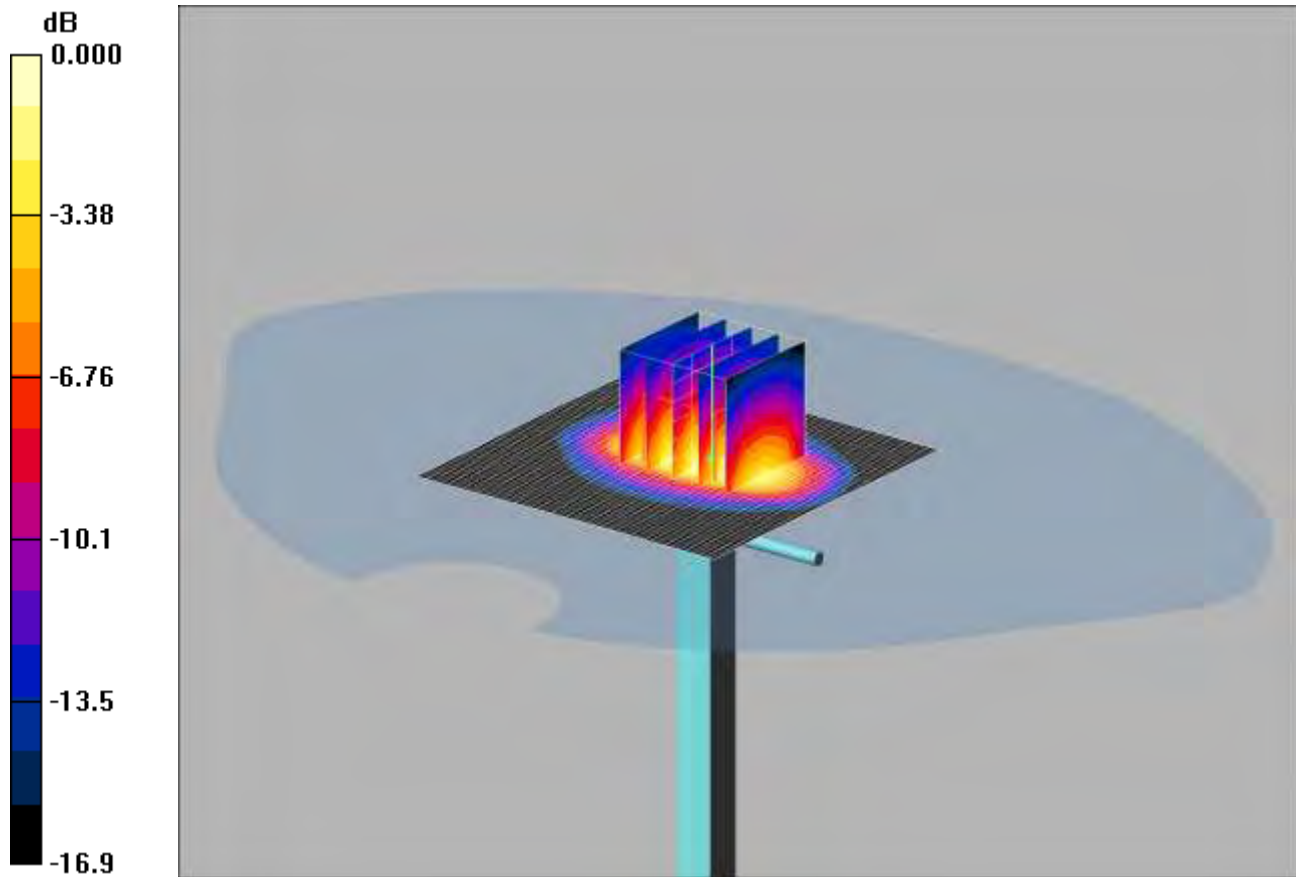
SAR(1 g) = 9.55 mW/g; SAR(10 g) = 5.05 mW/g

Maximum value of SAR (measured) = 10.7 mW/g

SCN/92490/123: System Performance Check 1900MHz Body 19 03 13

Date: 19/03/2013

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: SN537



0 dB = 11.5mW/g

Communication System: CW; Frequency: 1900 MHz; Duty Cycle: 1:1

Medium: 1900 MHz MSL Medium parameters used: $f = 1900 \text{ MHz}$; $\sigma = 1.49 \text{ mho/m}$; $\epsilon_r = 51.3$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(4.69, 4.69, 4.69); Calibrated: 11/05/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn431; Calibrated: 20/09/2012
- Phantom: SAM 12b (Site 56); Type: SAM 4.0; Serial: TP:1020
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

d=10mm, Pin=250mW/Area Scan (61x61x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 13.6 mW/g

d=10mm, Pin=250mW/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 95.9 V/m; Power Drift = -0.138 dB

Peak SAR (extrapolated) = 16.3 W/kg

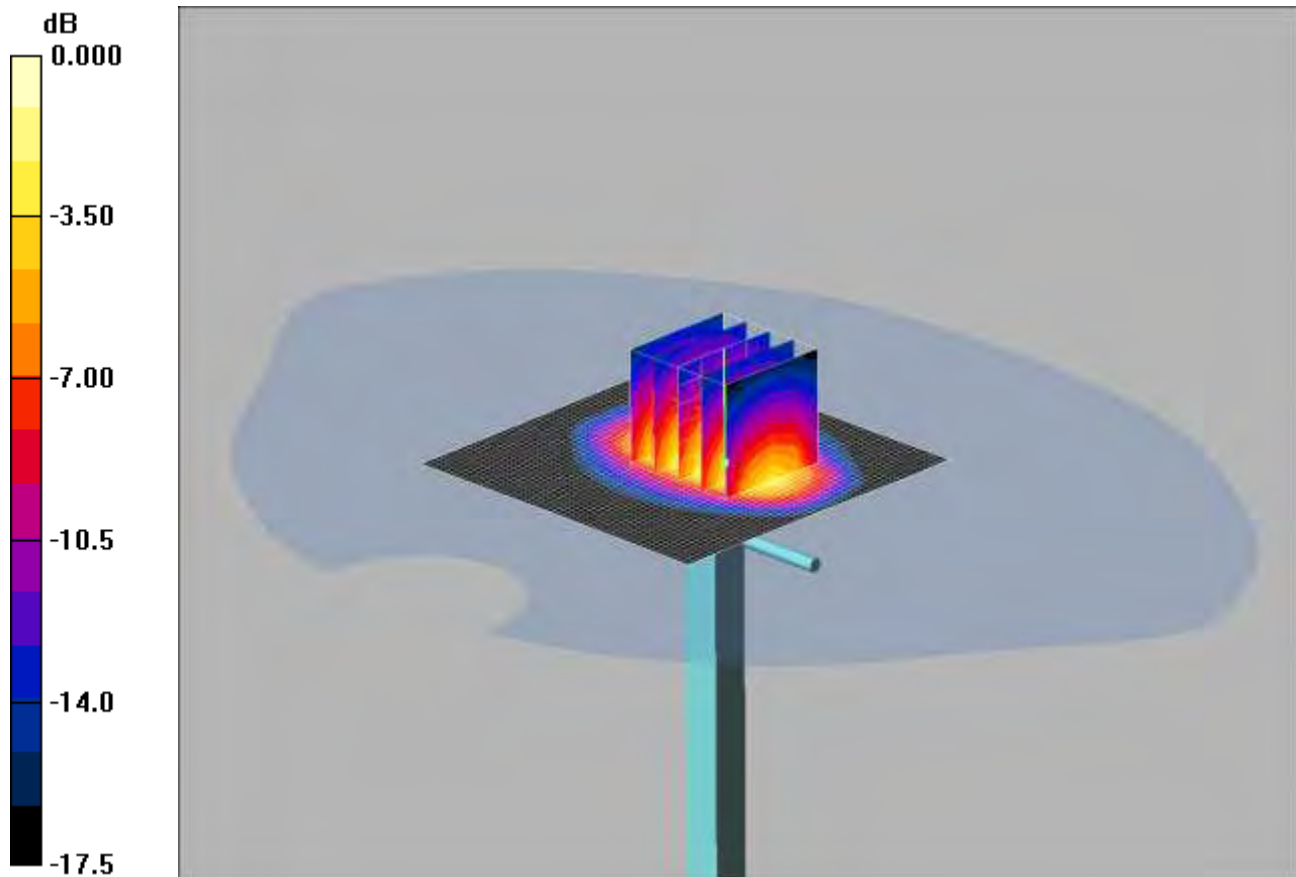
SAR(1 g) = 10.2 mW/g; SAR(10 g) = 5.5 mW/g

Maximum value of SAR (measured) = 11.5 mW/g

SCN/92490/124: System Performance Check 1900MHz Body 20 03 13

Date: 20/03/2013

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: SN537



0 dB = 11.5mW/g

Communication System: CW; Frequency: 1900 MHz; Duty Cycle: 1:1

Medium: 1900 MHz MSL Medium parameters used: $f = 1900 \text{ MHz}$; $\sigma = 1.49 \text{ mho/m}$; $\epsilon_r = 51.3$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(4.69, 4.69, 4.69); Calibrated: 11/05/2012

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn431; Calibrated: 20/09/2012

- Phantom: SAM 12b (Site 56); Type: SAM 4.0; Serial: TP:1020

- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

d=10mm, Pin=250mW/Area Scan (61x61x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 13.8 mW/g

d=10mm, Pin=250mW/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 95.7 V/m; Power Drift = -0.116 dB

Peak SAR (extrapolated) = 16.5 W/kg

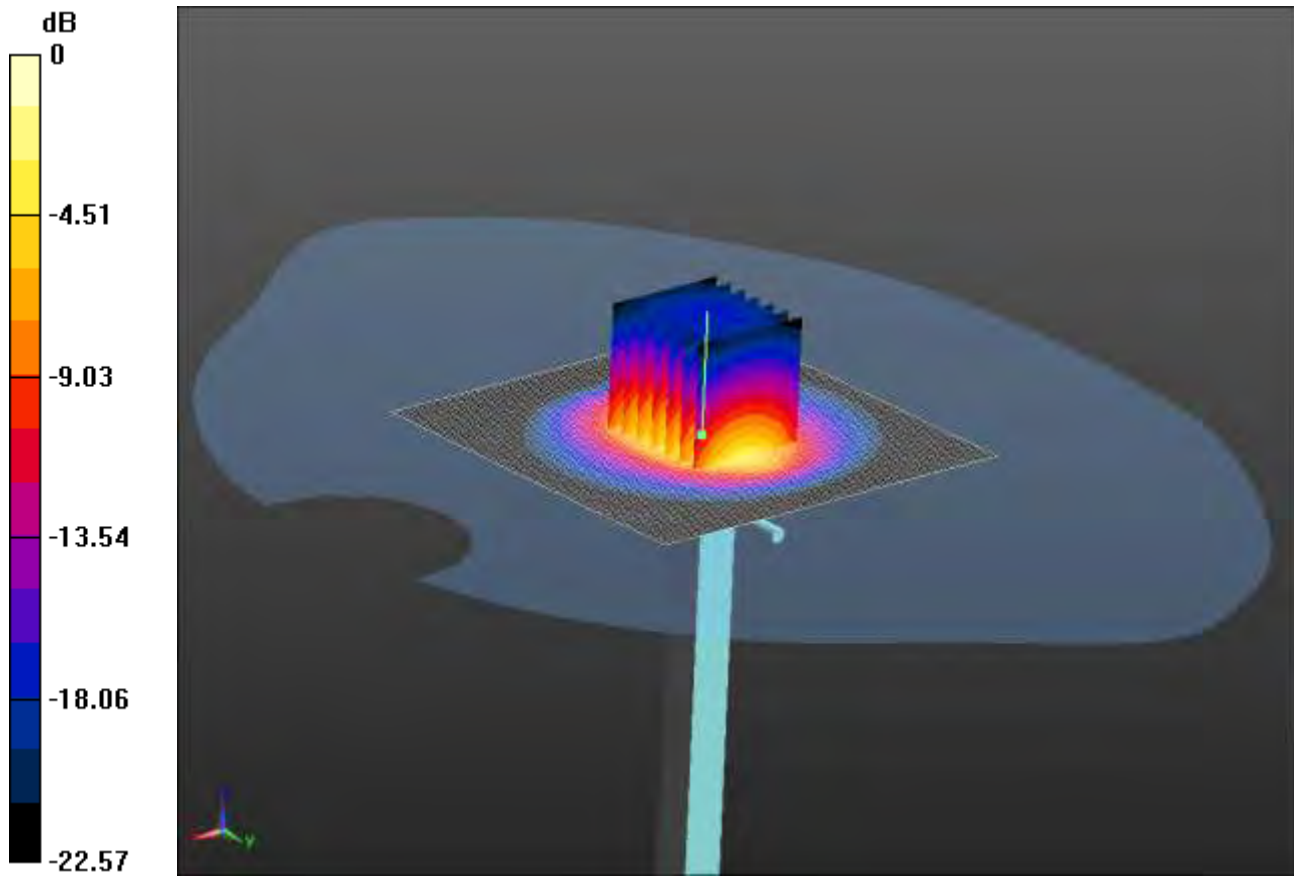
SAR(1 g) = 10.2 mW/g; SAR(10 g) = 5.5 mW/g

Maximum value of SAR (measured) = 11.5 mW/g

SCN/92490/125: System Performance Check 2450MHz Head 02 04 13

Date: 02/04/2013

DUT: Dipole 2440 MHz; Type: D2440V2; Serial: D2440V2 - SN:701



0 dB = 20.5 W/kg = 13.12 dBW/kg

Communication System: CW; Frequency: 2450 MHz; Duty Cycle: 1:1

Medium: 2450 MHz HSL Medium parameters used: $f = 2450$ MHz; $\sigma = 1.876$ mho/m; $\epsilon_r = 39.021$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3814; ConvF(6.89, 6.89, 6.89); Calibrated: 24/09/2012;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn450; Calibrated: 22/01/2013
- Phantom: SAM A (Site 58); Type: QD000P40Ca; Serial: TP:1193
- ; SEMCAD X Version 14.6.7 (6848)

Configuration/d=10mm, Pin=250mW 2/Area Scan (81x81x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm

Maximum value of SAR (interpolated) = 20.3 W/kg

Configuration/d=10mm, Pin=250mW 2/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 106.1 V/m; Power Drift = 0.04 dB

Peak SAR (extrapolated) = 27.7 W/kg

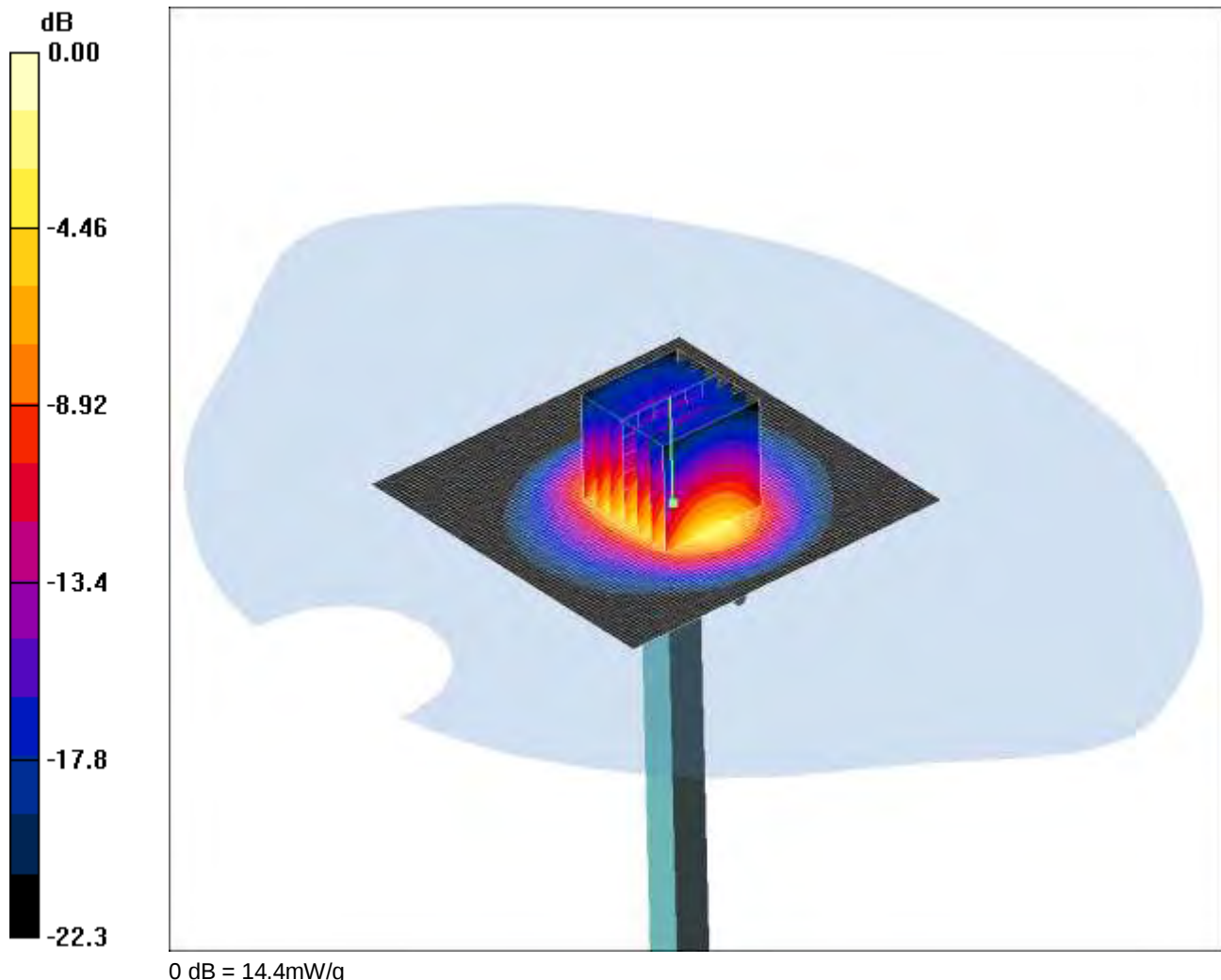
SAR(1 g) = 13.3 W/kg; SAR(10 g) = 6.06 W/kg

Maximum value of SAR (measured) = 20.5 W/kg

SCN/92490/126: System Performance Check 2450MHz Body 04 04 13

Date: 04/04/2013

DUT: Dipole 2440 MHz; Type: D2440V2; Serial: D2440V2 - SN:701



Communication System: CW; Frequency: 2450 MHz; Duty Cycle: 1:1

Medium: 2450 MHz MSL Medium parameters used: $f = 2450 \text{ MHz}$; $\sigma = 2.02 \text{ mho/m}$; $\epsilon_r = 50.5$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1528; ConvF(3.99, 3.99, 3.99); Calibrated: 26/07/2012

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn432; Calibrated: 02/05/2012

- Phantom: SAM 12b (Site 57); Type: SAM 4.0; Serial: TP:1031

- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 145

d=10mm, Pin=250mW 2/Area Scan (81x81x1): Measurement grid: dx=12mm, dy=12mm

Maximum value of SAR (interpolated) = 15.1 mW/g

d=10mm, Pin=250mW 2/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 81.9 V/m; Power Drift = -0.060 dB

Peak SAR (extrapolated) = 35.1 W/kg

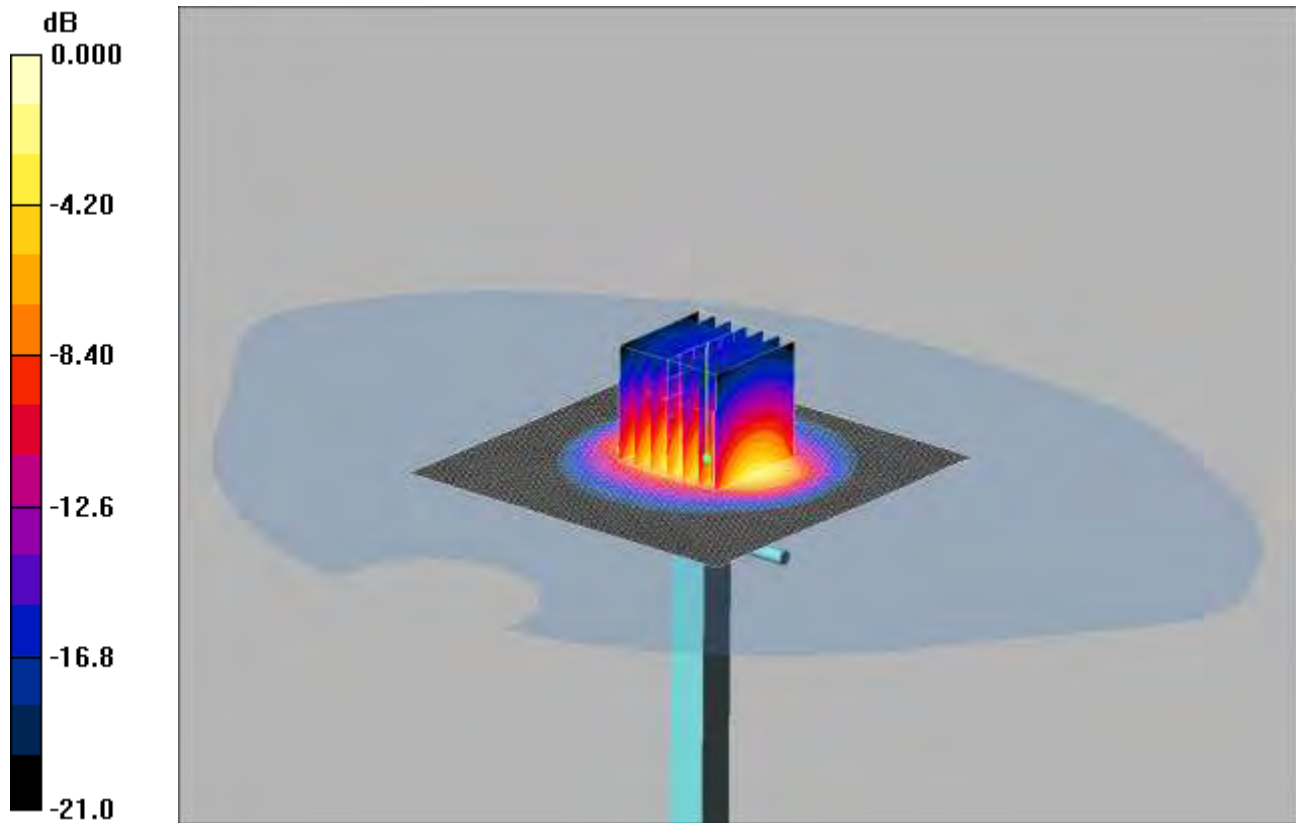
SAR(1 g) = 13.3 mW/g; SAR(10 g) = 5.91 mW/g

Maximum value of SAR (measured) = 14.4 mW/g

SCN/92490/127: System Performance Check 2450MHz Body 08 05 13

Date: 08/05/2013

DUT: Dipole 2440 MHz; Type: D2440V2; Serial: D2440V2 - SN:701



0 dB = 15.1mW/g

Communication System: CW; Frequency: 2450 MHz; Duty Cycle: 1:1

Medium: 2450 MHz MSL Medium parameters used: $f = 2450 \text{ MHz}$; $\sigma = 2.03 \text{ mho/m}$; $\epsilon_r = 51.5$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(4.13, 4.13, 4.13); Calibrated: 11/05/2012

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn431; Calibrated: 20/09/2012

- Phantom: SAM 12a (Site 56); Type: SAM 4.0; Serial: TP:1020

- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172 **d=10mm,****Pin=250mW 2/Area Scan (81x81x1):** Measurement grid: dx=12mm, dy=12mm

Maximum value of SAR (interpolated) = 15.9 mW/g

d=10mm, Pin=250mW 2/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm,

dz=5mm Reference Value = 84.5 V/m; Power Drift = 0.028 dB

Peak SAR (extrapolated) = 28.1 W/kg

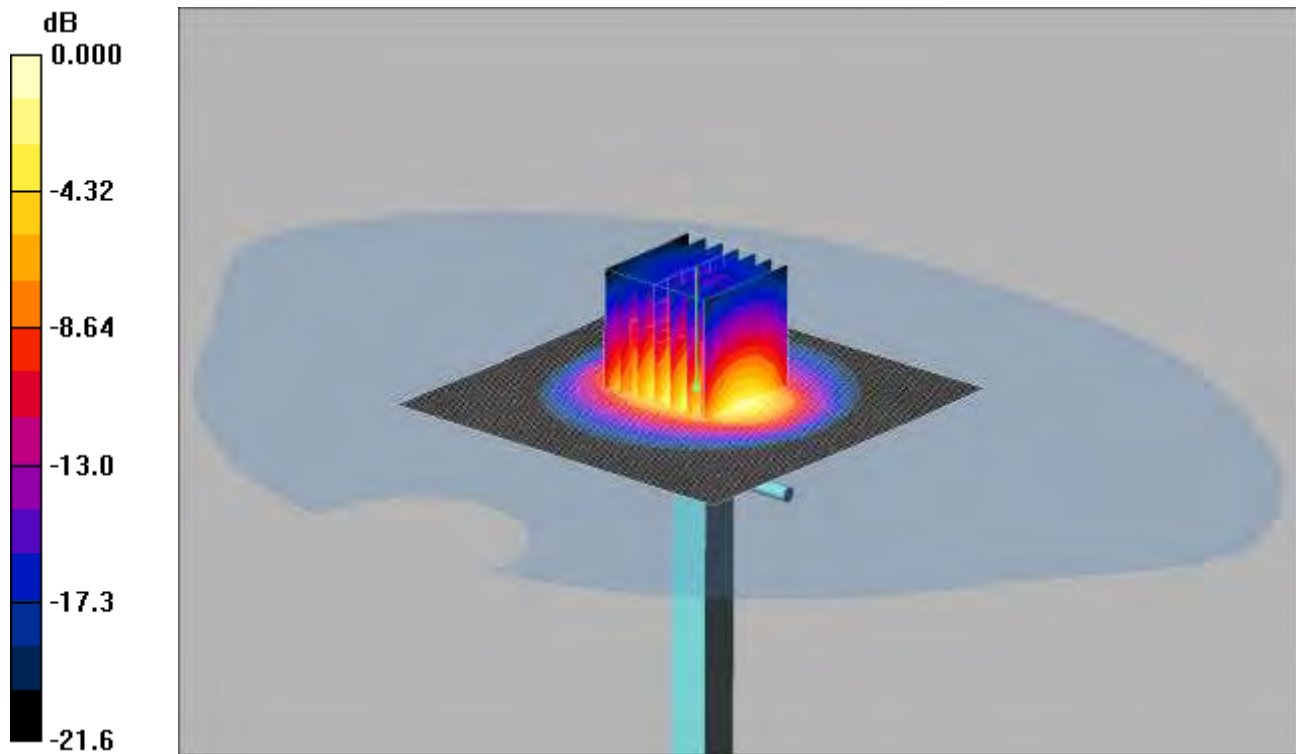
SAR(1 g) = 13.2 mW/g; SAR(10 g) = 6.19 mW/g

Maximum value of SAR (measured) = 15.1 mW/g

SCN/92490/128: System Performance Check 2450MHz Body 09 05 13

Date: 09/05/2013

DUT: Dipole 2440 MHz; Type: D2440V2; Serial: D2440V2 - SN:701



0 dB = 14.8mW/g

Communication System: CW; Frequency: 2450 MHz; Duty Cycle: 1:1

Medium: 2450 MHz MSL Medium parameters used: $f = 2450$ MHz; $\sigma = 2.03$ mho/m; $\epsilon_r = 51.5$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(4.13, 4.13, 4.13); Calibrated: 11/05/2012

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn431; Calibrated: 20/09/2012

- Phantom: SAM 12a (Site 56); Type: SAM 4.0; Serial: TP:1020

- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

d=10mm, Pin=250mW 2/Area Scan (81x81x1): Measurement grid: dx=12mm, dy=12mm

Maximum value of SAR (interpolated) = 15.7 mW/g

d=10mm, Pin=250mW 2/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 85.6 V/m; Power Drift = -0.065 dB

Peak SAR (extrapolated) = 27.8 W/kg

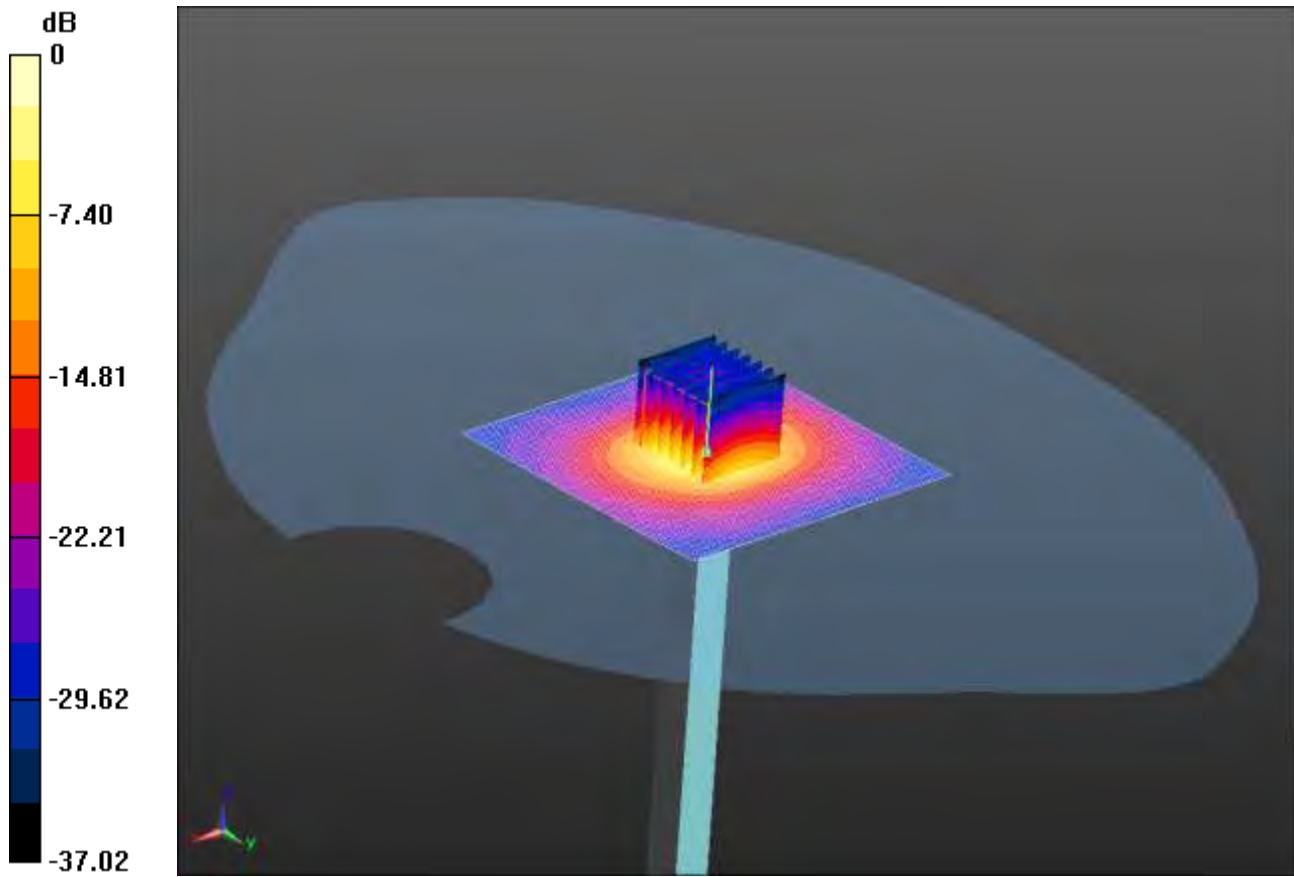
SAR(1 g) = 13.1 mW/g; SAR(10 g) = 6.1 mW/g

Maximum value of SAR (measured) = 14.8 mW/g

SCN/92490/129: System Performance Check 5200MHz Head 25 03 13

Date: 25/03/2013

DUT: 5GHz Dipole; Type: D5GHzV2; Serial: SN 1016



0 dB = 16.3 W/kg = 12.12 dBW/kg

Communication System: CW; Frequency: 5200 MHz; Duty Cycle: 1:1

Medium: 5200/5500 MHz HSL Medium parameters used: $f = 5200$ MHz; $\sigma = 4.687$ mho/m; $\epsilon_r = 36.095$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3814; ConvF(5.06, 5.06, 5.06); Calibrated: 24/09/2012;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn450; Calibrated: 22/01/2013
- Phantom: SAM B (Site 58); Type: Twin Phantom; Serial: TP:1020
- ; SEMCAD X Version 14.6.7 (6848)

Configuration/d=10mm, Pin=100mW/Area Scan (81x81x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 17.2 W/kg

Configuration/d=10mm, Pin=100mW/Zoom Scan (7x7x12) (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 65.700 V/m; Power Drift = -0.07 dB

Peak SAR (extrapolated) = 30.7 W/kg

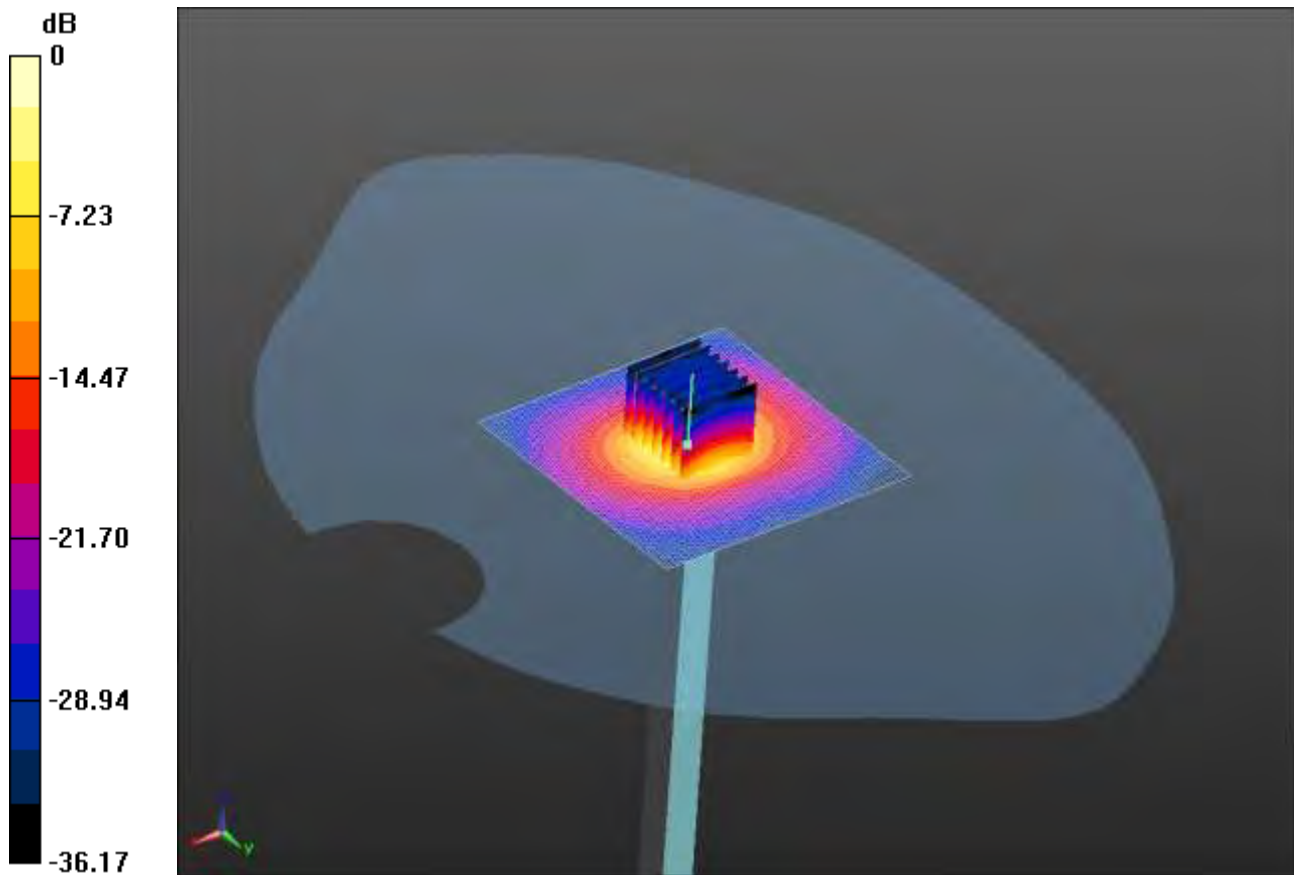
SAR(1 g) = 7.91 W/kg; SAR(10 g) = 2.3 W/kg

Maximum value of SAR (measured) = 16.3 W/kg

SCN/92490/130: System Performance Check 5500MHz Head 25 03 13

Date: 25/03/2013

DUT: 5GHz Dipole; Type: D5GHzV2; Serial: SN 1016



0 dB = 17.8 W/kg = 12.50 dBW/kg

Communication System: CW; Frequency: 5500 MHz; Duty Cycle: 1:1

Medium: 5200/5500 MHz HSL Medium parameters used: $f = 5500$ MHz; $\sigma = 4.96$ mho/m; $\epsilon_r = 35.419$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3814; ConvF(4.54, 4.54, 4.54); Calibrated: 24/09/2012;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn450; Calibrated: 22/01/2013
- Phantom: SAM B (Site 58); Type: Twin Phantom; Serial: TP:1020
- ; SEMCAD X Version 14.6.7 (6848)

Configuration/d=10mm, Pin=100mW/Area Scan (81x81x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 17.2 W/kg

Configuration/d=10mm, Pin=100mW/Zoom Scan (7x7x12) (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 61.301 V/m; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 35.7 W/kg

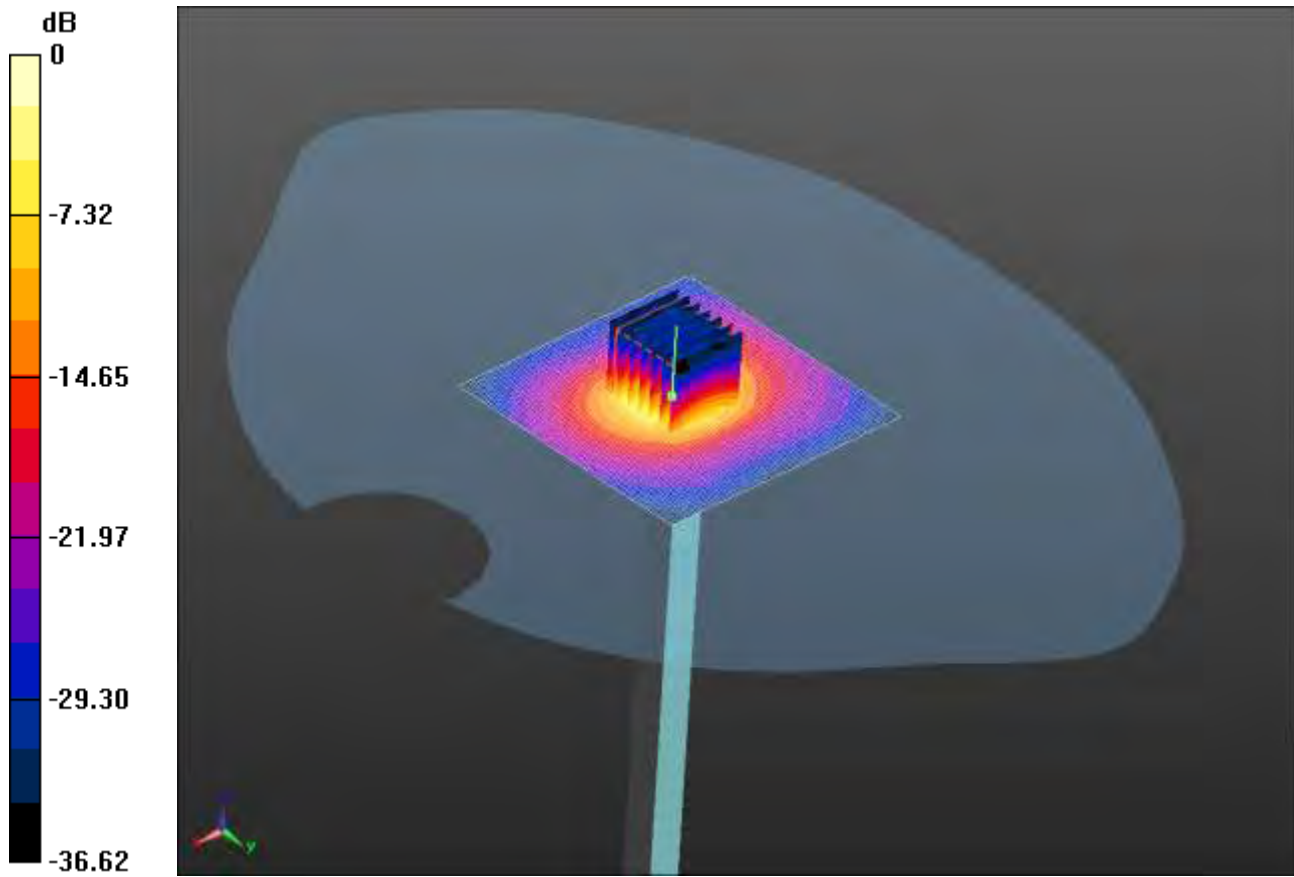
SAR(1 g) = 8.58 W/kg; SAR(10 g) = 2.45 W/kg

Maximum value of SAR (measured) = 17.8 W/kg

SCN/92490/131: System Performance Check 5800MHz Head 25 03 13

Date: 25/03/2013

DUT: 5GHz Dipole; Type: D5GHzV2; Serial: SN 1016



0 dB = 16.0 W/kg = 12.04 dBW/kg

Communication System: CW; Frequency: 5800 MHz; Duty Cycle: 1:1

Medium: 5200/5500 MHz HSL Medium parameters used: $f = 5800 \text{ MHz}$; $\sigma = 5.269 \text{ mho/m}$; $\epsilon_r = 35.061$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3814; ConvF(4.5, 4.5, 4.5); Calibrated: 24/09/2012;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn450; Calibrated: 22/01/2013
- Phantom: SAM B (Site 58); Type: Twin Phantom; Serial: TP:1020
- ; SEMCAD X Version 14.6.7 (6848)

Configuration/d=10mm, Pin=100mW 2/Area Scan (81x81x1): Interpolated grid: $dx=1.000 \text{ mm}$, $dy=1.000 \text{ mm}$

Maximum value of SAR (interpolated) = 15.4 W/kg

Configuration/d=10mm, Pin=100mW 2/Zoom Scan (7x7x12) (7x7x12)/Cube 0: Measurement grid: $dx=4\text{mm}$, $dy=4\text{mm}$, $dz=2\text{mm}$

Reference Value = 56.023 V/m; Power Drift = 0.04 dB

Peak SAR (extrapolated) = 33.5 W/kg

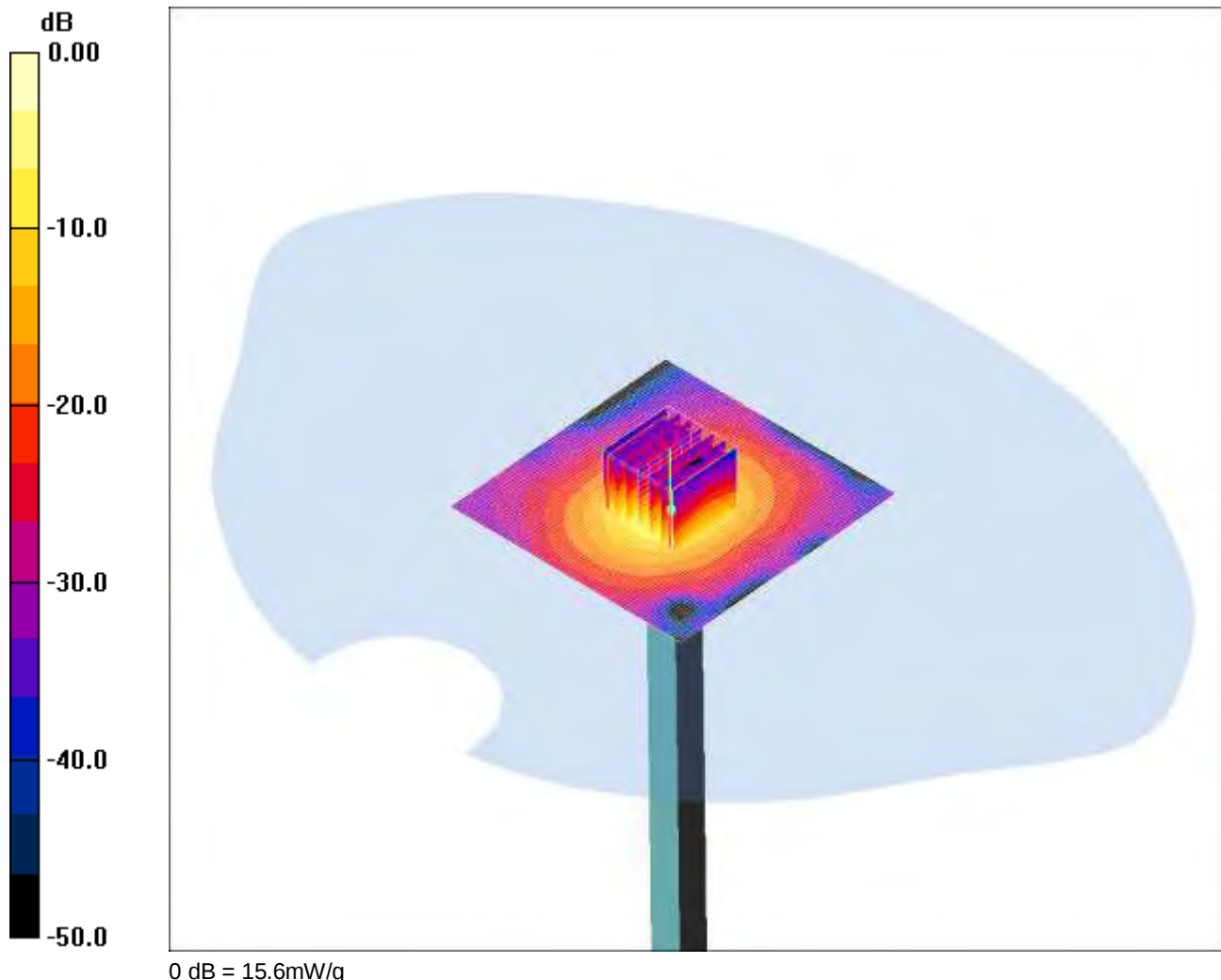
SAR(1 g) = 7.55 W/kg; SAR(10 g) = 2.13 W/kg

Maximum value of SAR (measured) = 16.0 W/kg

SCN/92490/132: System Performance Check 5200MHz Body 08 04 13

Date: 08/04/2013

DUT: 5GHz Dipole; Type: D5GHzV2; Serial: SN 1016



Communication System: CW; Frequency: 5200 MHz; Duty Cycle: 1:1

Medium: 5000MHz MSL Medium parameters used: $f = 5200 \text{ MHz}$; $\sigma = 5.37 \text{ mho/m}$; $\epsilon_r = 48.1$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3814; ConvF(4.39, 4.39, 4.39); Calibrated: 24/09/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection) Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn432; Calibrated: 02/05/2012
- Phantom: SAM 12b (Site 57); Type: SAM 4.0; Serial: TP:1031
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 145

d=10mm, Pin=100mW/Area Scan (81x81x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 8.48 mW/g

d=10mm, Pin=100mW/Zoom Scan (7x7x12) 2 (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 39.4 V/m; Power Drift = -0.195 dB

Peak SAR (extrapolated) = 29.9 W/kg

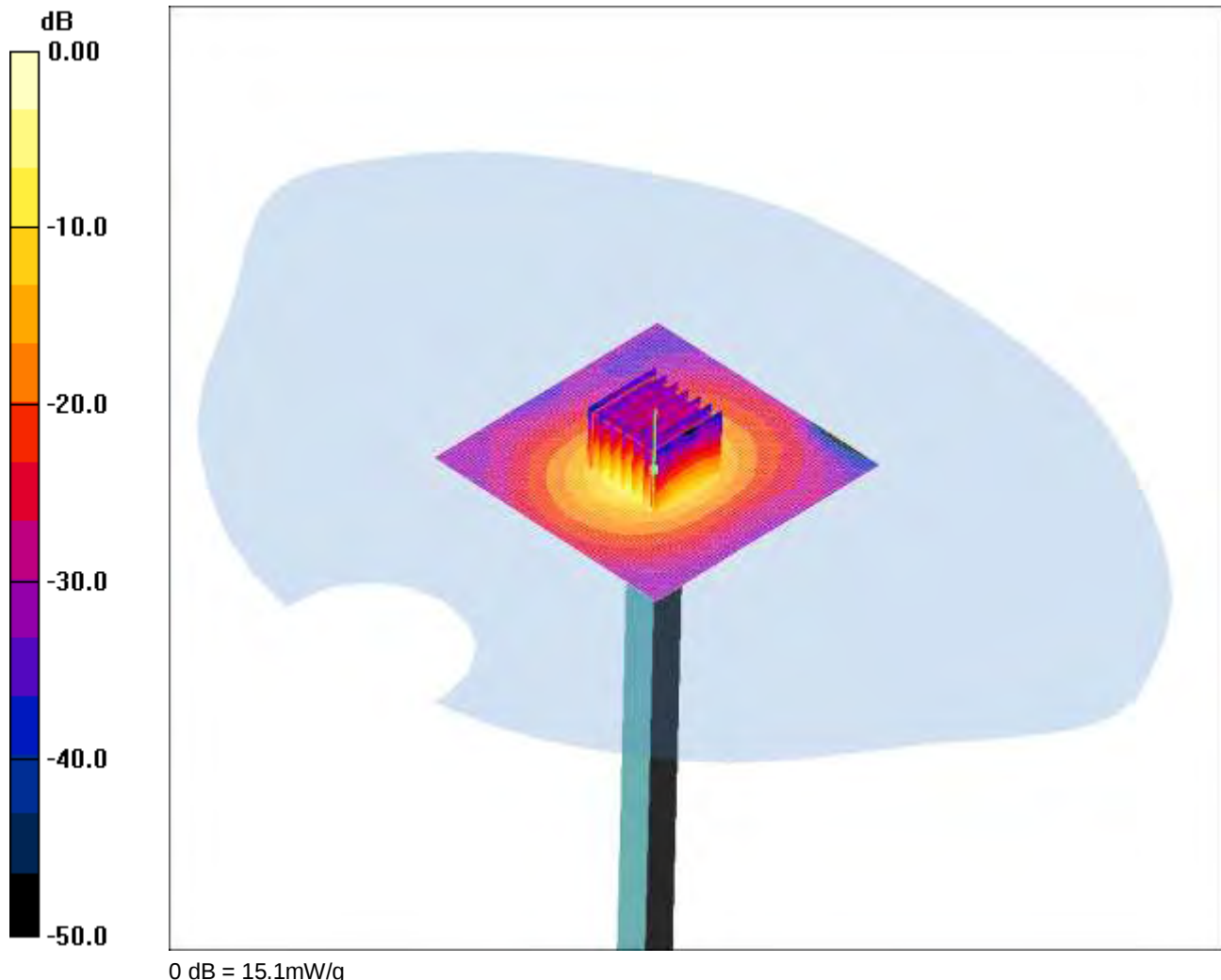
SAR(1 g) = 7.42 mW/g; SAR(10 g) = 2.12 mW/g

Maximum value of SAR (measured) = 15.6 mW/g

SCN/92490/133: System Performance Check 5200MHz Body 09 04 13

Date: 09/04/2013

DUT: 5GHz Dipole; Type: D5GHzV2; Serial: SN 1016



Communication System: CW; Frequency: 5200 MHz; Duty Cycle: 1:1

Medium: 5000MHz MSL Medium parameters used: $f = 5200 \text{ MHz}$; $\sigma = 5.37 \text{ mho/m}$; $\epsilon_r = 48.1$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3814; ConvF(4.39, 4.39, 4.39); Calibrated: 24/09/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection) Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn432; Calibrated: 02/05/2012
- Phantom: SAM 12b (Site 57); Type: SAM 4.0; Serial: TP:1031
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 145

d=10mm, Pin=100mW/Area Scan (81x81x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 8.14 mW/g

d=10mm, Pin=100mW/Zoom Scan (7x7x12) 2 (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 38.9 V/m; Power Drift = -0.039 dB

Peak SAR (extrapolated) = 28.9 W/kg

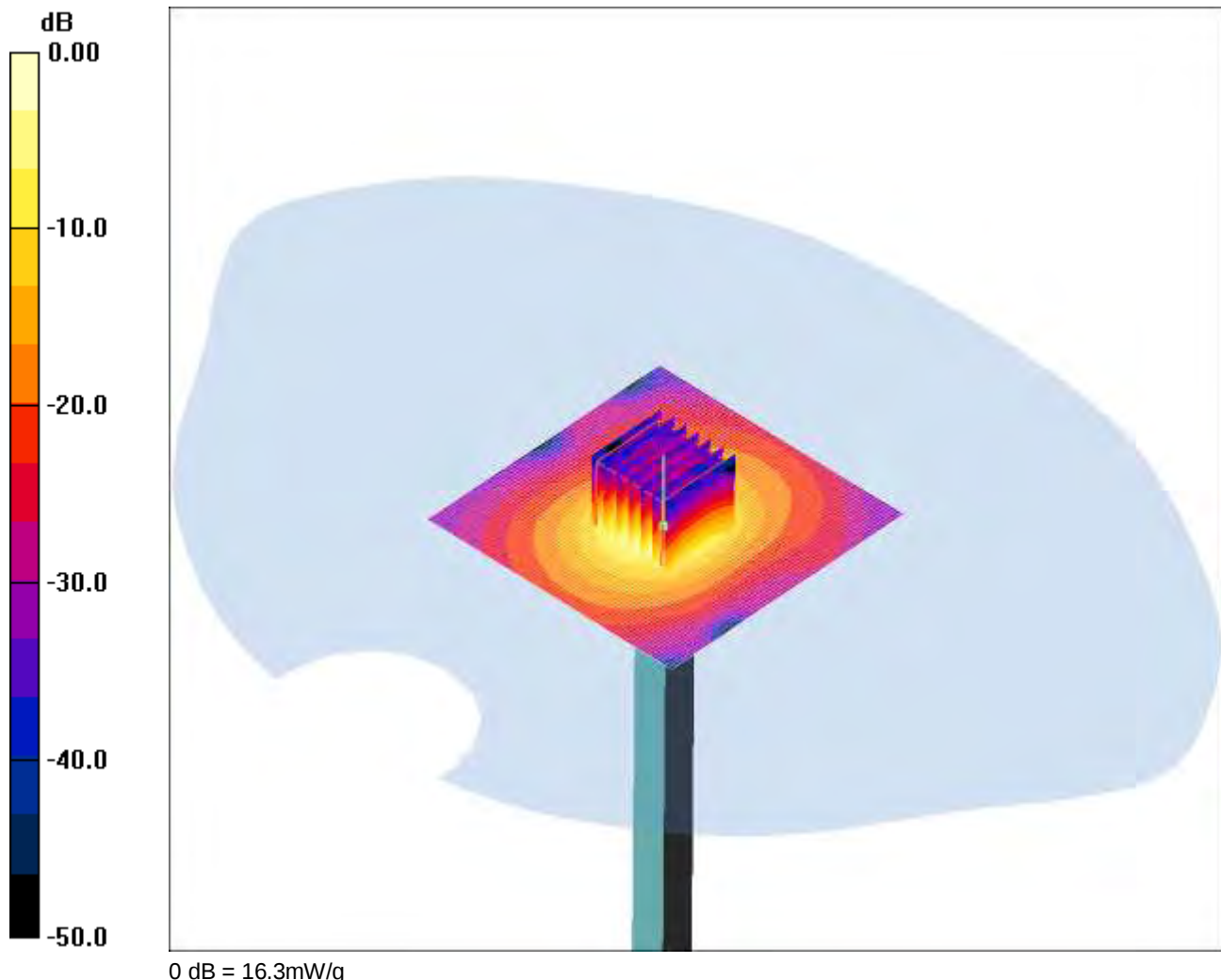
SAR(1 g) = 7.19 mW/g; SAR(10 g) = 2.05 mW/g

Maximum value of SAR (measured) = 15.1 mW/g

SCN/92490/134: System Performance Check 5500MHz Body 09 04 13

Date: 09/04/2013

DUT: 5GHz Dipole; Type: D5GHzV2; Serial: SN 1016



Communication System: CW; Frequency: 5500 MHz; Duty Cycle: 1:1

Medium: 5000MHz MSL Medium parameters used: $f = 5500 \text{ MHz}$; $\sigma = 5.74 \text{ mho/m}$; $\epsilon_r = 47.6$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3814; ConvF(4.02, 4.02, 4.02); Calibrated: 24/09/2012

- Sensor-Surface: 2mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn432; Calibrated: 02/05/2012

- Phantom: SAM 12b (Site 57); Type: SAM 4.0; Serial: TP:1031

- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 145

d=10mm, Pin=100mW/Area Scan (81x81x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 15.9 mW/g

d=10mm, Pin=100mW/Zoom Scan (7x7x12) 2 (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 56.4 V/m; Power Drift = -0.093 dB

Peak SAR (extrapolated) = 32.3 W/kg

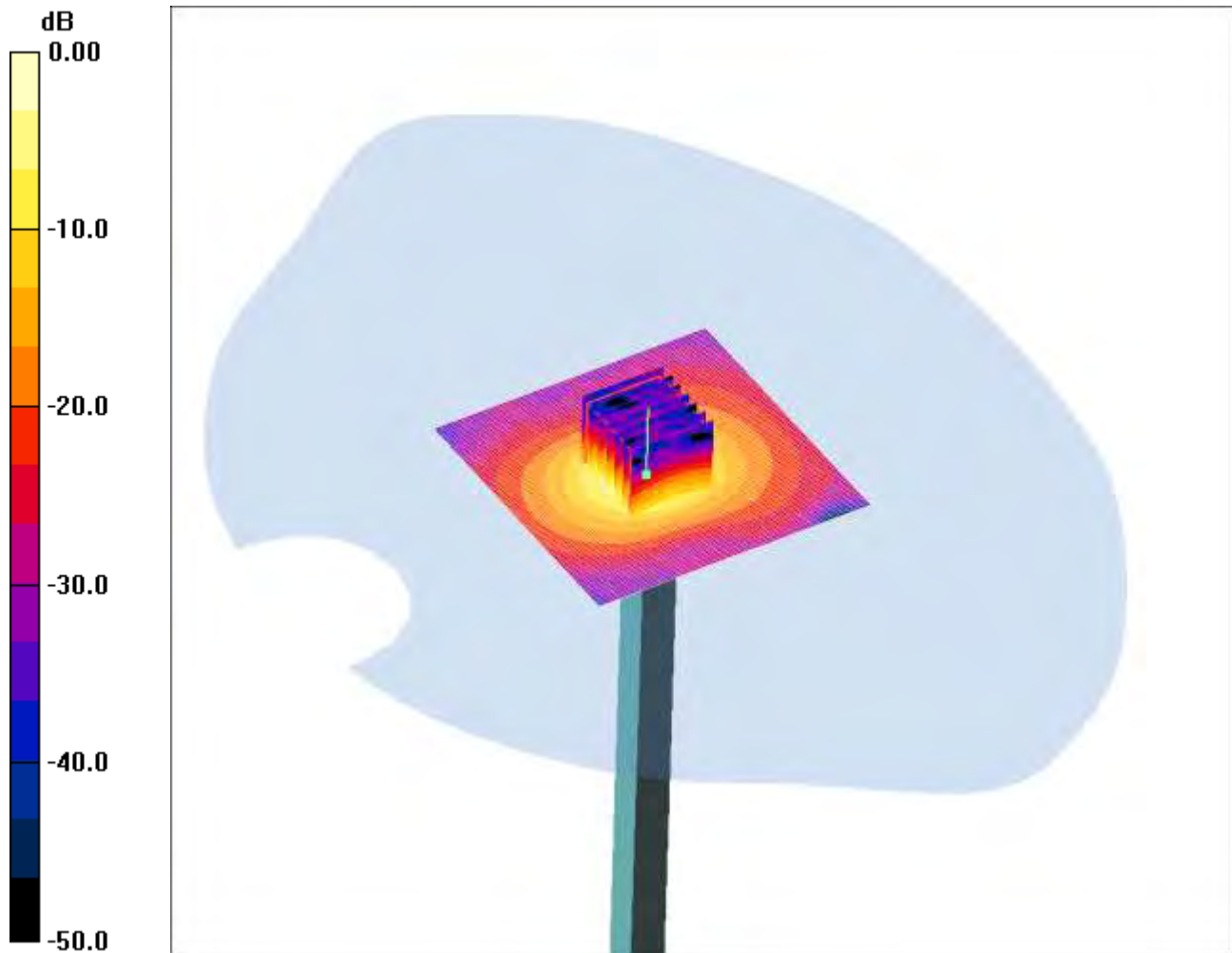
SAR(1 g) = 7.69 mW/g; SAR(10 g) = 2.17 mW/g

Maximum value of SAR (measured) = 16.3 mW/g

SCN/92490/135: System Performance Check 5800MHz Body 09 04 13

Date 09/04/2013

DUT: 5GHz Dipole; Type: D5GHzV2; Serial: SN 1016



0 dB = 16.0mW/g

Communication System: CW; Frequency: 5800 MHz; Duty Cycle: 1:1

Medium: 5000MHz MSL Medium parameters used: $f = 5800 \text{ MHz}$; $\sigma = 6.19 \text{ mho/m}$; $\epsilon_r = 47.2$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3814; ConvF(3.97, 3.97, 3.97); Calibrated: 24/09/2012
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn432; Calibrated: 02/05/2012
- Phantom: SAM 12b (Site 57); Type: SAM 4.0; Serial: TP:1031
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 145

d=10mm, Pin=100mW/Area Scan (81x81x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 15.4 mW/g

d=10mm, Pin=100mW/Zoom Scan (7x7x12) 2 (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 54.8 V/m; Power Drift = -0.119 dB

Peak SAR (extrapolated) = 31.8 W/kg

SAR(1 g) = 7.4 mW/g; SAR(10 g) = 2.07 mW/g

Maximum value of SAR (measured) = 16.0 mW/g